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The Rationalist Press Association

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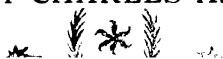
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THE RATIONALIST ANNUAL

For the Year 1933

EDITED BY CHARLES A. WATTS



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NAWAB SALAR JUNG BAHADUR

SOUTH PLACE ETHICAL SOCIETY,

CONWAY HALL,

RED LION SQUARE, LONDON, W.C.1

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CONWAY HALL: AN APPEAL FOR ENDOWMENT

THE South Place Ethical Society is historically descended from a religious group formed in 1793 by Elhanan Winchester, of Massachusetts, U.S.A. In 1823-4 this congregation built the South Place Chapel, well known as a home of progressive religious thought during the ministry of William Johnson Fox, and in more recent times of Dr. Moncure D. Conway. Under the leadership of these two men, and especially during Conway's ministry, the theological creed of the congregation gradually gave place to a modern outlook. But its old seriousness remained, expressing itself now in concern for moral and intellectual progress, and especially for liberty of thought and speech.

For many years past the function of minister has been discontinued, and the platform is usually occupied on Sunday mornings by one or other of the Society's appointed lecturers—C. Delisle Burns, M.A., D.Lit., John A. Hobson, M.A., S. K. Ratcliffe, and the Rt. Hon. J. M. Robertson. Other speakers, however, are often invited to address the Society.

The Sunday Morning Discourse, although the Society's chief public activity, is far from being its only one. There are the Play Reading Circle, the Study Circle, and a large variety of social activities; while the South Place Sunday Concerts continue to delight lovers of Chamber Music as they have done now for more than a generation. The Conway Memorial Lecture, delivered annually in honour of the Society's most famous leader, should also be mentioned.

With the erection of Conway Hall, the Society's present home, new and splendid opportunities for development have been opened. The building is convenient of access from all parts of the metropolis, and it is adjacent to what in a few years will become the academic quarter of London. To this centre will be attracted large numbers of those who are best fitted to appreciate the importance of that free inquiry in Religion and Ethics for which "South Place" stands.

The Society has provided about £40,000 for the purchase of the site and adjoining property and the erection of a building containing a large hall to seat 500, a small hall to seat about 100, a library, club room, and other accommodation. The Trustees now appeal for the provision of an Endowment Fund, so that the Committee may be freed from the necessity of securing lettings which in present circumstances are essential to maintain the Society's solvency. If this financial pressure were removed, further activities of many kinds could be undertaken.

**Contributions should be sent to the Hon. Treasurer of the Society,
Mr. C. E. Lister, at the above address.**

The Editor of the "Rationalist Annual" desires it to be understood that each contributor is alone responsible for the opinions he expresses, and that he in no way commits the R. P. A. or any of the other contributors to an endorsement of his views. The aim of the Editor is to provide a platform for all liberal thinkers in general agreement with Rationalism as defined in the Memorandum of the R. P. A.

SOME REFLECTIONS ON MISSIONARY EFFORT

By PROFESSOR H. J. LASKI

I HAVE been reading recently some attacks on Mr. Ghandi for his supposed hostility to Christian missionary effort in India. I do not know, nor am I profoundly interested in, his attitude to the theme. But the line of attack interested me by the simplicity of its assumption that India (or any other country) ought to be grateful for the gifts that missionaries bring. Even the replies were built round the argument that it was proof of Mr. Ghandi's nobility that in fact he was not so hostile. And that led me to reflect upon the temper implied in the zeal with which missionaries inflict their effort upon the non-Christian races of the world.

Let me say at once that for much missionary work I have both sympathy and admiration. A man like the Reverend George Brown, who lays the foundations of scientific anthropology in Melanesia; Archdeacon Owen, who has so nobly defended the rights of native tribes in Kenya; Father Damien (if Stevenson's account be accurate), in his work among the lepers of the South Seas: those unnamed hosts of men and women who have given of their best to education and medicine in distant and difficult places—these seem to me types of the human race we can ill afford to spare. Rationalists will yield to none in respect for their labours.

But those labours are one thing, and the assumptions which lie behind them are another. The purpose of the missionary is to save souls for Christ. He comes to bring to men and women a truth upon the acceptance of which, as he insists, their salvation depends. Whatever else he does, whether by way of training or medical relief, is subordinate to that essential effort. He is obeying what he believes to be a Divine injunction to spread the "word." The gifts with which the "word" is surrounded are at bottom no more than a method of winning the confidence of possible converts.

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There is nothing in the building of schools or the grant of medical assistance which is inherently a Christian function. Secular governments do both of these things with no desire of religious proselytization behind their effort. If the supporter of the missionary subscribes to his funds on the ground that these things "civilize" the backward races—bring to them the gifts of Western civilization—he is subscribing, no doubt, to noble objects; but he is not subscribing, at least in intention, to the main purpose the missionary societies have in view.

It is with this main purpose that I am here concerned. My anxiety is to understand the grounds which lead the missionary to believe that the acceptance of Christianity, in any sense that has meaning, by the African, the Hindu, the Chinaman, the Japanese, will add to the happiness of humanity. The questions I raise here arise out of that anxiety.

1. Is the missionary assumption that conversion implies the acceptance of certain moral truths, which make the non-believer thereby a better man? If the argument for his effort rests upon this general ethical ground, there are, I think, two things to be said: first, that it is doubtful whether there are any general ethical truths which can claim to be specifically Christian; and, secondly, that the general experience of Christianity by the Western world does not tend to show that Christianity has had the effect claimed for it.

On the first point, I suggest that the history of ethical theory is a final answer to any Christian claim. Its moral expression is nothing more than the deposit of traditions which Christianity did not originate and has practised no better than other faiths. Stoicism, Confucius, Lao-Tse, Platonism—these at least share with Christianity the right to affirm their possession of moral precepts as fine as any in the record of human thought. Insofar as the missionary claims that in this realm it is Christian doctrine that he is expounding, he is guilty of historical and intellectual error. What he is communicating is common to the thought of mankind without regard to race or creed.

On the second point, an impartial observer may reasonably doubt whether the position of humanity has been improved by the existence of the Christian Churches. Theirs is a terrible record of persecution. They have almost invariably fought on the side of reaction. They have opposed the acceptance of all new truth which seemed to them in conflict with the particular doctrines with whose care they were charged. Once they obtained great possessions, they ceased to be the protectors of the poor and the humble. Most of their great revivals—notably that of Methodism—

have been a political tactic which drew attention away from important social problems and persuaded the oppressed to give heed to the issues of the next world in order that the powerful might be relieved from the need to perform their obligations in this one. Anyone who considers the present position of Christian civilization can hardly regard it as an advertisement to the heathen.

2. If the assumption is that by conversion the missionary seals his convert into salvation, the argument seems to me to rest on even weaker foundations. The truth of Christian dogma is a matter of testimony, and it is increasingly unable to meet the attacks which have been made upon its adequacy. There is not a central principle of Christianity—the Incarnation, the Atonement, the Resurrection—in which the West retains any historical confidence. The progress of research has reduced Christianity to the position of a faith without rational foundations, whose hold depends upon the unwillingness of men to examine the grounds of ancient traditions which have the prestige and magic of antiquity about them. Insofar as the missionary presents his doctrine as a body of simple and unquestionable truth, he is deceiving the people whom he seeks to convert.

If, on the other hand, he believes that his truths are simple and unquestionable, that attitude is the outcome of his own ignorance; and an ignorant man who does not know the problems of his own creed is surely not entitled to insist upon its virtues. We should not agree that a man is entitled to teach physics who was ignorant of its foundations; why should we make any other assumption in the religious realm?

It may be said that there are missionaries—Dr. Albert Schweitzer for example—who are fully aware of the complexities. Where these exist can they hope to make them have meaning for those whom they propose to convert? Does Dr. Schweitzer expound the principles of his *Quest of the Historical Jesus* to the neophytes of the African desert? If he does, can they have any conception of what he is talking about? If he does not, what doctrine precisely is it that the converts are asked to accept?

There is the further problem of the division of missionary effort. The missionaries all speak in the name of Christianity, but each has a slightly different message to bring. Can the Roman Catholic explain to the Pathan of the North-West Frontier precisely why there is no salvation outside his particular Church? Can Father Elwin, who works so nobly among the Indian outcastes, explain, also precisely, the differences which separate him from Rome? Can the Presbyterians explain, with any hope of conveying insight, the

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grounds which make them claim validity for their Church as against alternative Churches? If the explanations are made and accepted, are we entitled to believe that peoples so skilled in the appreciation of nice historical argument have need of the ministrations offered? If the explanations are not offered, is the missionary intellectually honourable in accepting the conversion as adequate?

I do not think it is unfair to argue that missionary literature in general makes no serious attempt to answer these questions. It dwells enormously upon incidental issues. It gives impressive accounts of its educational and medical successes. It tells of the mitigation of barbarous practices. It records the growth of habits of industry among its devotees. Few people can read unmoved of the arduous and endurances of missionaries who grapple with flood-relief in China or with cholera in India. But it is not specifically Christian to do any of these things. All religion apart, it would still remain a human obligation to perform them; and all of them are performed, and have been since the dawn of human history, without the acceptance of Christian dogma being their impelling foundation.

The Rationalist, I suggest, is entitled to know the content of the Christianity accepted by the peoples to whom it is brought. That it is good to be kind rather than cruel, generous rather than mean, civilized rather than barbarous, industrious rather than lazy, peaceful rather than warlike—all these things I understand. But all these things the whole world understood long before Christianity was dreamed of, and the world will continue to believe them long after Christianity has passed away. Insofar as the missionary preaches merely this, what title has he, as I have already argued, to urge it as specifically Christian? Insofar as he goes beyond it, what proof can he offer either that the surplus is understood, or that its substance is intelligible to peoples who inherit a wholly different tradition?

I forget, it may be argued, the social effects of missionary effort. Whatever its historic adequacy, it has brought hope not otherwise attainable to backward and repressed peoples. In India, for example, the spread of Christianity among the outcastes has been a main weapon in elevating them to a sense of indignation at Brahmin superiority. Here, as elsewhere, it has created that sense of equality which is the birthright of the human being. There is, I think, some substance in this view, though its measurement is a question in proportion upon which the evidence is both dubious and scanty. And even here certain things must be remembered. The appeal of the missionary to the outcaste, like the appeal of all religions to the disinherited, came from its response to

their sense of right denied. It succeeded, not as a proof of Christian truth, but as a denial of Brahmin injustice. And the reality of the Christian faith in equality is less satisfactory when weighed by alternative scales. We have yet to hear of a revolt of the Christian Churches in America against injustice towards the negro ; nor do we hear that Roman Catholic missionaries in the Congo are fighting tooth and nail for the equality of those natives whom, only the other day, M. Vandervelde declared, in the Belgian Parliament, to be living in conditions of abject slavery. Here, as elsewhere, the Churches have no difficulty in adjusting themselves to the conditions of profit-making enterprise.

I am not, be it observed, making any case against the missionary on the ground that he is usually the inevitable precursor of shameless commercialism. I do not use the plea, which has strong anthropological weight behind it, that his work so prejudices tribal custom as to deprive the latter of its sanctions for good behaviour and happiness without the provision of an effective substitute. I do not inquire, as it would be legitimate to inquire, whether Christians who have not adequately convinced their own civilization are entitled to extend the area of their efforts until they have completed their domestic task. I do not even ask whether Western civilization, the Churches included, would allow, say, the ancient East to proselytize for their own special faiths, and extend to it the amplitude of protection which missionaries receive as a matter of course from their respective States. These are interesting and important questions, the answers to which would not, I submit, be wholly favourable to the missionaries' case. For it would reveal the fact that the continuance of their effort is based not on the zeal of the individual, but on the power of secular technique to vindicate, by the use of force, his claim to be zealous. The warship and the machine-gun are the unseen accompaniments of the Bible and the hymn-book.

My argument is the different one, that the enthusiasts for missionary enterprise make no critical inquiry into the intellectual premisses of their work. They take for granted things which no rational observer has ground for doing. The case for their own creed is not less dubious than the case for the creeds they seek to displace. The belief they engender is not, by the very nature of the society in which it has to operate, the belief they are seeking to engender. Their own religious differences are not susceptible of rational explanation to their converts. The social good they do can be done without the use of the vast doctrinal apparatus they bring into play. If they teach their converts to be other-worldly, they are endangering that attention to

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material well-being which is the greatest need of the backward races. If they devote themselves to the extension of material well-being, their religious effort is a mere by-product unrelated to their central achievement.

Missionary work, in a word, I can understand as an effort on the part of those who undertake it to satisfy some ardent impulse within themselves. If someone has a gospel which he must preach or perish, no doubt he will go forth to preach ; but if he assumes thereby that he is enlarging the boundaries of the kingdom of Christ in any sense which has real meaning, I take leave to doubt his intellectual *bona fides*, even while I accept his emotional good faith. And on the side of material accomplishment his effort seems to me to drug the conscience of the State into leaving unperformed those tasks which are an inherent part of its obligation to its citizens.

This is, I think, a more important matter than is generally realized. One of the gravest difficulties in all Colonial administration is the impact upon governmental habits of the settler's tendency to think that the second-best is good enough for the subject-peoples concerned. When missionaries provide the services which ought to be the first concern of the State, the latter is tempted to withhold the initiative it should be prompt to exercise. Taxation can then be kept low ; and, as we have seen only too clearly in places like Kenya, when it is imposed it is so deeply resented that officials become timid where they should be determined, hesitant where they should be decisive. The quality of State-effort is seriously hampered by associating efforts with missionary enterprise which are only later and too partially understood to be a matter of State-concern.

We in England know only too well the tragic consequences to education of assuming that it was the proper object of Church-control. Not even the struggle of fifty years has released the schools from the noxious hand of ecclesiastical control. It is a serious matter that the same mistake should have occurred in the territories for which we are responsible. The missionary can never adequately replace the scientific anthropologist as the source of counsel upon culture-contacts. By allowing him to usurp that position we have created problems for the future which it will be no easy matter to solve.

MODERN PHYSICS AND CAUSALITY

By PROFESSOR J. B. S. HALDANE, F.R.S.

UNTIL recently physics, as generally expounded, was based on the idea of causality, or on some idea, such as invariable succession, which leads to exactly the same consequences. It has lately become necessary to modify the idea, and the result has been the usual chorus from anti-scientific quarters that Materialism has broken down, miracles have a firm scientific basis, and so on. As a matter of fact, the position now adopted by advanced physicists is not new. It was adumbrated by Hume, and still more clearly by Karl Pearson in his *Grammar of Science*. As Hume was, and Pearson is, an "Infidel," I hereby caution the faithful against using doctrines so closely akin to theirs as supports for religion.

Modern physics may possibly be moving away from Materialism, but it is certainly a dangerous ground for theologians to build on. An unfortunate American professor of philosophy, F. C. S. Northrop, a disciple of Professor Whitehead, has recently published a work called *Science and First Principles** in which he identifies the "closed universe," which Einstein deduced from the general theory of relativity, with God. Some time before the publication of the book Friedmann, and after him Lemaitre, showed that if the universe had these properties it would expand without limit. In other words, Professor Northrop's god is doomed to swell up and burst. As, however, Professor Northrop had presumably not read Lemaitre's paper, this highly original eschatological conclusion escaped him, and his book has doubtless had a considerable sale in quarters where the reconciliation of science and religion is fashionable.

But all this has nothing to do with the problem of causality. The laws of physics, until recently, were stateable in the form that a situation or state of affairs A was necessarily followed by a situation B. Now, a situation never repeats itself exactly, so a law of that kind could be stated accurately only as follows:—If a state of affairs merely differs

* Cambridge University Press ; 1931.

from A within certain specified limits, it will be succeeded by one only differing from B to less than a specified extent. A weight of one pound one foot distant from the fulcrum of a lever will balance a weight of two pounds two feet distant on the other side. If our estimations of the two lengths and the first weight are correct to one part in a million, the second weight may differ from two pounds by anything up to three parts in a million. The more accurate our observation, the better is our prediction ; but because of the inevitable inaccuracies of measurement we could never predict with absolute certainty, even if we were quite sure of the laws of physics. However, these laws, if only for the sake of simplicity of statement, were put in a precise form. And the tacit assumption was made that there was no limit to the possible accuracy of measurement, so that by progress in technique we could reduce the errors of prediction to as small values as we wished.

Heisenberg states that this last assumption is false. There is an upper limit to the accuracy of all measurement, and the uncertainty becomes very great when we are measuring things as small as atoms or electrons, though it is negligible in ordinary measurements, which involve billions of billions of atoms.

A hypothetical experiment will make this clear. If we are to predict the future path of a particle, whether the moon or an electron, we must know its position and velocity at a certain time. The easiest way is to observe its position at two successive instants. Now, if the particle is very small we might take two successive photographs of it through a microscope with very rapid flashes of light. But there is a limit to the accuracy of microscopic observation set by the wave-length of the light. With visible light we cannot measure distances smaller than about one five thousandth of a millimetre. To do this we must use some radiation of shorter wave-length, such as X-rays, which allow us to measure the distances between atoms in a crystal. Why not, then, use X-rays for our moving particle, and thus determine its position with very great accuracy? There is no objection save this, that a particle which stops X-rays light, or any other radiation, is deflected out of its path in the process. So the fact that we have observed the particle means that it has been deflected out of its path on two occasions. The shorter the wave-length the bigger the deflection, so we can measure the position accurately only at the price of vagueness about the speed, and conversely. It is as if the speedometer and mileometer of a car were so far apart that one could not look at both simultaneously. Since matter shares some of the wave-like properties of light, it appears that no other method of

measurement would be any better, and no physicist has been able to suggest a way of avoiding this uncertainty. It is negligible compared with other errors when the particle is as big as the moon, or even sixpence. It is very large for an electron, so large that when electrons are crowded together, as in matter, we cannot distinguish one from another, or attach any experimentally verifiable significance to the identity of an electron. These difficulties apply only to prediction, not to the measurement of past events. We know where our moving electron was when it was photographed, but not where it will go next. It does not, of course, follow that there is no way out of the impasse.

A good many experimental and a few mathematical physicists hope for the invention of some methods of observation involving principles as new as were those of microscopy in the seventeenth century. The majority prefer for the moment to express the laws of physics in one of two ways.

One may say that, given a system, say a molecule, in a given state, there is a certain probability that it will undergo a specified change within a given time. Thus to take a case from my own work, there is a roughly even chance that a molecule of the enzyme catalase, when combined with hydrogen peroxide and gingered up with a suitable amount of energy, will break up to yield water and oxygen in the course of a ten-millionth of a second. But nothing we can do will alter this probability, or make it into a certainty.

Or one may give a perfectly unambiguous account of the universe in terms of wave-mechanics. An electron or proton is represented by a train of waves characterized in a particular manner, which interact with other wave trains. But the electron is nowhere in particular. The waves merely determine the probability of finding it in a given place at a given time. Unfortunately, however, we cannot observe the waves directly, or imagine any method of doing so. Darwin has suggested that the wave-mechanical account of the universe is the true one, and the account of it in terms of particles the work of our minds.

It is obviously far too early to come to any decision on these difficult matters, and the theory is clearly in its infancy. But so many remarkable facts predicted on the basis of wave mechanics have been experimentally verified that there is little doubt that in some form or other that theory has come to stay. Naturally, those who would like to see the scientific method of tackling problems restricted to as narrow limits as possible have welcomed the view that the admitted unpredictability of future events not only implies the breakdown of the principle of causality, but leaves an opening for miracles, psychic intervention, and the like. It cannot be too clearly

pointed out that, though we do not know where a given electron, in certain circumstances, will go next, we do know the probability of its going in any given direction, and any spiritual or supernatural guidance applied to electrons would be as much a breach of the laws of the new physics as of the old. It has been suggested, for example, by a physicist that the human nervous system may serve as an amplifier for these atomic events and translate them to a visible scale. To a biologist this seems highly improbable. Bacteria do, as a matter of fact, obey simple laws of probability, like atoms, as regards their death-rates, and probably in other respects. But even protozoa, and still more higher animals, by mere virtue of their size, escape the tyranny of chance almost completely, just as does an insurance company, provided it issues a sufficient number of policies. Evolution has been an escape from chance, not an amplification of chance. Bacteria are killed by heat according to the same law that an unstable chemical compound, or an unstable element, disappears. This seems to be because the destruction of a single molecule entails the death of the whole microbe. Our lives do not depend in this way on single molecules, but on large numbers, and hence the laws by which our death-rates can be predicted are of a quite different type.

The higher organisms, including man, obey laws which cannot at present be reduced to those of physics. They may be irreducible, but there is no reason to doubt that they are laws. My character is different from yours. In my opinion this is due to physical differences in our brains. It may conceivably be due to differences in superimposed souls. I cannot imagine that it is caused by mere chance—or, in other words, not caused at all.

The attempt to bring the detachable soul theory back in that particular manner is only one of a series of rearguard actions which are constantly being fought by the retreating army of religion. To my own mind the formulation of any at all definite theory of the relation between brain and consciousness seems singularly futile, simply because the matter can be investigated by ordinary scientific method when the technique is sufficiently developed. To-day one can run a needle into one's arm near a nerve, connect up through an amplifier with a loud speaker, and listen in to the nervous impulses going down from brain to hand when one voluntarily bends a finger. Perhaps in less than a century it will be possible in the same kind of way to observe the cerebral processes associated with consciousness. Already records have been made of electrical changes in the brain, but we have as yet no idea whether the changes so far observed are associated with mental processes.

Speculative theories in science are justified if, and only if, observation is impracticable. It is legitimate to speculate about conditions in the centre of the earth or sun because no one can even suggest, much less perfect, a technique for direct observation of these hellish regions.

Nevertheless we can already say two things about the mind and body relationship. In the first place, we can place a limit to the possible sphere of indeterminism in human conduct. In the second, we can point out that the progress of physics in the last ten years has removed a great many of the objections to Materialism.

The question of indeterminism can be stated fairly simply. Can we get enough information about a man and his environment to predict his future behaviour with high probability? The answer, of course, is "No." For the present we must leave that kind of prediction to palmists and astrologers. These unselfish benefactors of the human race confine themselves to predicting the future of ordinary mortals for very moderate fees, when a simple calculation from the horoscope of Mr. Tom Walls would have enabled them to predict the winner of this year's Derby, and thus secure a considerable fortune. But we can also frame our question hypothetically. "If we had enough information, could we predict a man's conduct successfully?" The answer is "Probably yes." The ground for this apparently unscientific confidence is the study of twins. Suppose that an intelligent savage takes the view that every radio loud-speaker contains an imprisoned spirit, which, according to its own sweet will, discourses on the domestic troubles of Mrs. Buggins, the truths of Revealed Religion, or the habits of the bluebottle fly, we shall most easily dissuade him by predicting its subjects of conversation from the *Radio Times*. But if we cannot find that journal we may be able to convince him as follows: There is another loud-speaker next door. He sends a trusted friend there. When the two sets are tuned in to different wave-lengths their conduct is quite different. When both dials point to the same number then both make very nearly the same noise. Our savage will either adopt the materialistic explanation or suppose that the same spirit can be induced to possess several radio sets at once.

So with twins. About a sixth of all twin pairs are monozygotic, or, as Galton rather unfortunately called them, identical twins. They are of the same sex, resemble one another physically to a great extent, and, if brought up together, behave in a similar way. Their likeness is almost certainly due to the fact that they are produced from the same fertilized egg, and not merely have the same parents and pre-natal environment, but receive the same assortment

of hereditary material from each parent. If they are separated soon after birth, they may behave quite differently, one being more intelligent or more emotionally unstable than the other. But if brought up together till the age of eight at least, their characters are as similar as their faces. If you have studied one, you can safely bet on the behaviour of the other. Lange* studied pairs of monozygotic twins of which one was known to be a criminal. Of thirteen such pairs ten were both criminals, and only three pairs contained one criminal and one guiltless or at least undetected member of society. Thus, if a criminal has a monozygotic twin, the chances are about twenty-three out of twenty-six, or eighty-eight per cent, that the twin will be a criminal too. If we allow for the effects of head injuries, the chances are considerably greater.

Now, I do not think any supporter of human indeterminism would take the view that a pair of twins has only one soul if they are brought up together, and two if they are separated at birth. The alternative is that the soul is responsible for twelve per cent at most of those acts of moral choice which keep us out of jail. Actually this figure is probably far too high. If we allowed for minor differences of environment in twins brought up together, we could make our prediction far sharper. I think that an extended analysis along the same lines would show that at least ninety-five per cent of our important ethical decisions fall within the nexus of causality. And there is no evidence that the other five per cent fall outside it except our own feelings, which are a doubtful guide and, I think, really only suggest that our will is our own and not someone else's. This proposition is, I suppose, denied only by logical believers in Divine Omnipotence, who are rare. So, if science is undermining the belief of certain physicists in causality, it is certainly supporting the same belief as regards biological matters.

And the curious physical facts which Sir Arthur Eddington brings forward in support of indeterminism furnish at least equally good arguments for Materialism. The main objections to Materialism were as follows. Living organisms have a unity which is very hard to explain if they are made of atoms outside one another in space, and influencing one another only as do the various moving parts in a machine. And it is still harder to explain the unity of consciousness (incomplete though it is) as due to the co-operation of a thousand million brain cells, more especially since Lashley has shown that some features in the behaviour of rats do not depend on any single portion of the brain, but are functions

* *Crime as Destiny* (Allen & Unwin).

of the cerebral cortex as a whole. This difficulty is just as acute even if we attribute mind-like qualities to individual atoms. Nor can we see how, if consciousness is determined by atomic motions, we can ever have logical grounds for believing in the truth of a statement or the rightness of an action.

But now the physicists tell us that we cannot with certainty pin down an atom to a definite position in space. Space is a feature of human perception and a convenience of human thought rather than an absolute reality. Matter—that is to say, things which exist whether we are aware of them or not—remains as real as ever. But it appears that we have been too rash in our statements about it. Space and time are all very well for describing the moon or sixpence, but if we try to give a thoroughgoing description of atoms in terms of them we are led into self-contradiction. Things are not entirely outside one another, though nearly enough so for most practical purposes until we get down to atomic dimensions. There is nothing mystical in this partial breakdown of individuality. It can be expressed in quantitative terms, and it enables us to predict future events with increased accuracy. In particular it explains the appearance of new properties as the result of chemical change, and has led to the discovery of some very startling chemical facts, notably the fact that hydrogen is a mixture of two gases, which can be separated, and only change over into one another quite slowly.

We are just beginning to apply these ideas to living beings, but it already seems likely that the very large molecules found in living matter allow of the appearance, on an observable scale, of a sort of wholeness which is not evident in ordinary material systems. One can even see, in a very sketchy way, how associated with a brain there may be certain physically specifiable occurrences which cannot be located anywhere particular in it, or at any exactly specifiable time. Such occurrences would perhaps serve as physical descriptions of our mental processes, which are not sharply localizable in our heads, and begin and fade out in a rather indefinite manner. And it does not appear to me impossible that such occurrences should be so related to one another, and to external events, as to exhibit characteristics such as truth and purpose. However, while it would seem that Materialism has become vastly more plausible in the last ten years, its proof or disproof depends on the development of cerebral physiology.

The reasoned objections to Materialism, such as are made by such writers as Professor Eddington and my father, Professor J. S. Haldane, are, I think, partly based on a misconception of the meaning of that term. If Materialism means the belief that you can describe the world in terms of

matter as envisaged by Lucretius, Galileo, Mill, or Einstein, it is obviously false. Science is not bound by the words of even its greatest men. The Royal Society recognized this fact when it adopted the motto "Nullius in verba." Only the Church is committed to worship of the Word. Now, philosophers are sometimes sure about the properties of matter, and mathematicians reason as if they were so. An experimental scientist is never sure. If he were, he would not make experiments, except to convince his opponents. But this attitude is most unsatisfactory in a teacher of elementary students. So at any moment there exists a body of rather out-of-date science which is dogmatically taught to school-children and undergraduates. It is clear enough that you cannot explain mind in terms of the properties of matter as laid down in text-books of physics. Fortunately for the prospects of Materialism, every physicist knows that the text-book account of matter will not even explain all its own properties, though it will explain most of those which are of immediate practical importance.

Now, Eddington, struck with the fact that large and small material objects of matter, such as stars and atoms, do not obey the rules which were worked out for objects of medium size, is inclined to doubt whether there are any rules at all, or anything to obey them. And he is confident that if there are any rules he can violate some of them whenever he desires by an act of will. J. S. Haldane, rightly insisting on the fact that life cannot be explained in terms of the physics which he learned in his youth, seems to jump to the conclusion that it cannot be explained in terms of physics at all. It would doubtless be possible so to define physics that this was true. Actually, however, the physicists are now engaged in stating the idea of wholeness, which in a rather vague way was familiar to biologists, in precise mathematical terms. The attempt is as yet incomplete, but it does not involve the abandonment of the essential physical standpoint, that events can be predicted by the use of quantitative reasoning about things which exist whether we know them or not.

There is perhaps a tendency in Rationalist ranks to take the old-style physics too seriously. In so far as that is so they are fair game for Sir Arthur Eddington and my father. But the most hide-bound believer in the nineteenth-century mechanistic Materialism is some fifteen centuries nearer to truth than a believer in the Apostles' Creed. Science will, of course, revise its cosmology. It will probably adopt a queerer and queerer world-view as time goes on. But if it continues to fulfil its function of enabling man to predict or control events it will never return to a world-view which failed in both these respects.

A SONNET REVERIE

BY EDEN PHILLPOTTS

Spring

NOW fall the shard and scale, and quickening
In virent blush of golden-green delight ;
Dawn glimmers through the forests of the night
And flash the dewy emeralds of Spring.
Not ocean's billow, nor a torrent's might,
Rolls bravlier than the mounting saps that wing
To bud and finial of each growing thing,
From valley lush to stark and snowbound height.
Speed we our blood for honour, still to vie
Amid the riot of this vernal strife,
Re-echoing the primal battle-cry
When Reason leapt into the lists of life,
To find so many an adamantine ill
Fortressed beyond the writ of Spring's goodwill.

Summer

Flowers are writing Summer on the earth,
And myriad blooms that man shall never see
Beckon the butterfly and honey bee
Through hill and dale and on the mountain's dearth,
By equatorial swamp and alpine scree.
Not for our patronage and passing mirth
These sleights were wove : the secret of their birth
Is fruit, to guard their immortality.
No blossom sees the ripeness of her heart ;
No man can tell the seed he leaves behind ;
But better flow'r and man should both depart
And sterile vanish down cathartic wind
Than cumber space with pullulating weeds,
Or what the futile, human aphid breeds.

Autumn

Her budget Nature balances ; again
Earth sweats with fungus, and a West wind reaves
The sere and gold and auburn of the leaves
For undertaker worm and latter rain ;
While she her loss and credit cunning weaves,
Setting against the mildew, canker, bane,
Ripe root and kernel, orchards, stock and grain,
Flow of the vintage, weight of garnered sheaves.
Harvest from herb and herd and human deed,
The fallen fruits, the finished act and thought,
Shall germinate inevitable seed
And nevermore to nothingness be brought.
Earth holds no grave, nor vanished time a tomb,
But granaries to fill the future's womb.

Winter

Sink the accomplished seasons from their prime ;
December suns grow miserly of gold ;
Bare the wood hangers ; dim the weald and wold ;
At morning light grey dew-fall flashes rime ;
New fallen snows their coverlet unfold ;
Hibernal moons unto the zenith climb,
And winter stars their punctual message time
To tell another little year is told.
Not death, but slumber, chants the lullaby :
Drowsy surcease each narrowing day reveals ;
The deep nocturnal hours are slow to fly
Where tonic cold bites home and frost anneals.
In darkling majesty the planet sleeps
While life her transient fast and vigil keeps.

Consciousness

Within the ambit of this stern duress,
Beauty and horror and wide mystery,
Our sentient, conscious span has come to be,
For ever challenged by unanswered guess
At what his purpose Man may yet decree,
Why still he lags and founders in the stress
Of human habitude, so pitiless,
Still to distrust and spurn and disagree.
Clown in the travelling circus of a sun,
By learned souls with piety perverse
Declared the victor in a race not run,
Proclaimed the acme of the Universe,
Man struts, while aged stars in mercy mild
Doubt the majority of such a child.

Reason

Vain thus to view our Order, or be found
On cynic pessimism's arid road :
Mankind aforetime nobler bore his load
And in the soil of venerated ground,
To mark how sacred Reason there abode,
Signs of our ancient splendours yet abound,
Words of our ancient wisdom still resound
Negation shall not dull, nor time corrode.
Sneer not at where to-day we haply stand,
But seek the authentic road where once we
stood ;
Revere the visions of a promised land
Waiting goodwill in human brotherhood,
And, lit by Golden Ages past, ally
To better Man's potential destiny.

Hope

Still do our growing-pains on topmost tide
Roar down the shingles of the human soul
To tear and rend, to torture, rive and roll
With bitter, salty torment far and wide
In mingled agonies. Yet not the whole
Of cosmic grief is ours, for woe must ride
Through every haunt of stars, where still abide
Brave conscious beings struggling to a goal.
Pure Reason's victory would see her reign
In whatsoever vessel she may chance ;
Love vanquish hate and pity physic pain ;
Mind sing the anthem of a sure advance,
And Evolution count her blessed gain
When consciousness shall conquer circum-
stance.

NATURAL HAPPINESS

By LLEWELYN POWYS

(*Author of "The Pathetic Fallacy," etc.*)

SINCE our primitive forefathers first looked about them with conscious thought how many strange whim-whams have got into our heads ! We have deceived ourselves in every possible way. No illusion has been too fantastic for our superstitious speculations. It would seem that almost everything visible has at one time or other been an object of worship—stones, trees, animals, birds, fishes ; and we have gone so far as to credit the very grasshoppers with similar intentions, as they rest in the hay with brittle knees crooked.

To see the skull of a man cast out of a grave by the spade of a country sexton is a provocative experience. This odd pot of bone, with lost handles, belongs to the only animal who has dared to tease the subject universe with witty innuendoes. All the other beasts of the field have been content with their hour of life, have asked no more than to feel the sun upon their hides, and to devour, and to swallow water. Man alone has been partial to discontent ; the slugs even show complacency as, with silent, secret perspicacity, they draw towards the undefended seedlings of their appetites.

The number of pernicious misconceptions that have been ready set for our childish minds can never be catalogued. We are all of us the same—black skins, brown skins, yellow skins, and white skins ; all of us no better than precocious apes snapping at shadows. How could it be otherwise ? We awake out of an infinite oblivion to find ourselves alive on a sturdy planet of miracle and mystery. The myths of antiquity trickily preserved in pot-hook ciphers hedge us in with erroneous conclusions. How can we be expected to envisage existence with a clear, disinterested intelligence ?

We grow up obsessed with the legends of our particular locality. We are dominated by the persuasions of custom. Our kings on their gilded thrones, our dressed-up judges, convince our flighty minds as to the stability of society, and not once in a lifetime do we see behind such administrative expedients. The priest rises to bless us with pontifical fingers punctiliously adjusted, and his large claims provoke

no protest. We do not see him as a direct representative of sacerdotal Egypt, an obsolete witch-doctor out of the remote past, invoking the aid of beings that never have existed except in the bewildered nightmare dreams of savages. Meanwhile on every side the stir of life continues with its weasel wickedness, its may-fly triviality, and its inexplicable inclination towards what is gentle, altruistic, and good.

The cuckoo's hollow echo comes to us through our breakfast window, troubling with its naughty promise both maid and yellow-hosed bachelor. Swift as a half-seen faery, a mouse crosses the garden path, a diminutive questing beast, the quiver of a lobelia flower the only proof of its passing. The white campion in the hayfield gives out to the June night its sweet breath. With bellies full of the blood and flesh of fellow animals we stand up to practise self-interested pieties, the claws on our fingers carefully disguised with gloves.

Punctually once a day the earth is turned from the sun's disc, and the benison of sleep falls upon all—falls upon the little Princess in her palace-bed, falls upon the haymaker with his stiff back, falls upon the unscrupulous midnight fornicator; none, none being excluded from this recurring cessation, from this repeated draught of blessed annihilation. It is a dispensation of widest scope; the horse with its enormous odd-shaped cranium experiences it, the willow wren also, swaying on a pendulous reed, with tiny skull cradled beneath feathers. Then again the sun rises, and from one side of the hemisphere to the other all is clatter and clamour. The birds chirp and twitter, the animals disturb yards and fields with rude unintelligent voices, and men continue to deceive themselves with frozen words.

Below this diurnal procession, so superficial, so profound, so paltry, so heroic, the ultimate laws of Nature continue uninterrupted. Obedient to their ordering, the nebulas of the firmament are congregated and dispersed, and fire burns and water drowns; and the Abbot's body, with its wicker-basket ribs, is slowly and inevitably transmuted into dust, be his mediæval stone coffin never so tight.

Even in the few days that are allowed us, days no more in number than could be added together by a child in a nursery, we can observe these disciplined energies at their unending task of destruction and creation. Nothing on this earth has permanence. Knuckle-inch by knuckle-inch the sarsen stones of Stonehenge are crumbling away, while within the gigantic circle of Avebury there springs up a village scarce mindful of the past. Beyond the famous Gate of Damascus, where generations of camels have knelt for their burdens, where David walked, and Solomon, his hair

powdered with gold dust, uttered his wise saws, a government building has now been erected for the use of the smart civil servants of the Mandate. A few years will go by, and all once more will be altered; and these sandstones of sanctity, this crucifixion mould, will be disturbed for some quite new and unforeseen purpose. There is no rock of ages. Where for summers grass grew there is now wheat, and where the sheep were folded docks, cow's parsley, and thistles. Between our cradle and our grave time is no longer than a rook-boy's whistle, and yet long enough to recognize this process of passing, passing, passing.

We see it, acknowledge it, and yet a moment later the wisest of us is to be found disturbed over affairs that have no substance of constancy. Idealists have made wide use of this perpetual flux in their homilies. This fundamental rule of earth existence has given them many a brave opportunity for pressing home their doctrines of denial. All ends in death. In death all human activity is cancelled. How many men does not one see struck down without reason, like forest stags in the pride of their grease? It is death's pastime to play such tricks; there is no jest more common. Men stay idling after legacies, and before a month is past it is they that keep company with coffin beetles. On Ladyday a grocer stands snug before his packages, all his gay tins of preserved fruit on the shelf above his head; before Easter the tapes of his apron have been unloosed for his swaddling shroud. There is confusion in this clerkly reasoning. To give oneself over to worldly interests, to social ambitions, nothing could be more foolish; but there is no good reason for any indiscriminate disparagement of the pleasures of the senses. All human knowledge, all moralities, all religions, derive ultimately from these messengers. It is out of their twilight whisperings that all supernatural heavens have been invented. Our vaunted minds are nothing but the senses in flower. When the senses wither and die the mind withers and dies with them. To observe the alacrity with which the mind will go about to furnish justifications for the conduct of its proud masters is a spectacle both humorous and humiliating. What will it not do to excuse a self-interested individual?

Now, far from distrusting the temporal delights that come through the body, we should abandon ourselves to them with utter confidence. The way of the senses is the way of life. It is the gentry with their hands in the till and their eyes on heaven who as good as ruin existence. There should be open-air temples in every town and village where philosophers could expound this soundest of doctrines. Why is half the population tormented with restraints and restrictions, obedience to which in no way furthers the public good?

Because the priests for generations have been confederate with the money-makers, and they both know very well that if natural happiness were allowed the generations would no longer accept their second-rate maxims, no longer be so docile, so easy to be exploited. Without doubt half the ethical chat they din into our ears is designed to keep us at work. Love flaming with desire has always been the great reservoir of natural happiness. To experience it is to laugh with secret joy, to become immortal.

From the epoch when the human race gave up their free wandering life and began to sow and reap and domesticate animals, false values became popular. Civilized life lays emphasis upon property, upon gold and silver, and oxen and asses; heathen life looks for its rewards from bodily enjoyments. As a matter of fact, there is no doubt that the acquisitive impulse is especially damaging to human happiness. As soon as it becomes a predominating obsession evil and misery are everywhere present. War follows war, religious persecution religious persecution; then slavery, exploitation, and deep woe. With the desire for possessions the very nature of the human race alters. Merely to be alive should be sufficient reason for happiness. Natural happiness should be the prerogative of men and women, just as it is the prerogative of the mole in its winding tunnel or the stickleback in its shining stream. I learned this from watching the natives in Africa. When uninterfered with by the white settlers they command this passage-way to natural happiness. It is open to them. They work for amusement, and never for drudgery. They find sufficient reward in being about under the sun, content with wild water and scant victuals. Though this folk are as black as so many devils, I never saw one of them with an expression mean or ill-tempered. Unperverted by sordid interests, they have retained their spiritual health, and are as superior to us in their attitude to life as are moths to pismires.

Nothing is more lamentable than to see the number of lives sacrificed, utterly wasted, in the Western world to-day—each worker with his own petty pre-occupations walking forward to the grave as though drugged. Our education is directed towards this consummation. We must learn how to be successful; he whose coffers are most full is most highly extolled. Education worthy of the name should have one purpose—to teach us how to live the fullest possible lives in whatever state it should have pleased Fate to call us, whether this be in a counting-house, or in the common market-place, or in a gaol. Always we should be taught to be conscious and more conscious, to be accessible to ideas, to be receptive to sense impressions. We should be taught to be expert in love-making. We should come from our schools fortified

against mischance, knowing that nothing matters as long as we remain healthy and alive.

Too many men and women spend their time between an office and a band-box home in a state of intellectual stupor. No human being should ever wake without looking at the sun with grateful recognition of the liberty of another day ; nor give himself to sleep without casting his mind, like a merlin, into the gulfs between the furthest stars. We are all of us grossly constituted. To listen for a moment to the wind as it stirs the leaves of our garden trees, and to realize that this murmur was troubling earth vegetation before men were, and will be troubling it when they have gone, is to take knowledge of the breath of the Infinite. It is a mystery, a sign for everyone, this movement of the planet's atmosphere. It passes over the borders of the earth like a presence. It dislodges the dust in the belfry where the owl wakes and the jackdaw sleeps. The nettles grouped by the farmyard wall sway to it, and in wide open spaces its music is not lost. No message comes through our senses but is full of worship—the taste of brown bread and red wine, the smell of a field of dazzling charlock, the sight of swallows sweeping back and forth over the tilted roof of a barn, the cool fair flesh of a young girl's body, the liquid song of a blackbird in the white twilight of the longest day ! The Cretans used to assert that the grave of Jupiter was in their locality. They knew the place well, and would often play tipcat there, or weave insect cages for their children out of the pleasant sweet vernal grasses that grow so plentifully where earth has been newly disturbed. When, in the autumn weather of last year, I passed a mangel grave in the corner of a certain field I could not help fancying it to be the sepulchre of my father's God, and that if I had had the temerity to remove the straw and to lift the heavy sods something else than roots, round and golden, would have been revealed ! For, let them say what they will, the experience of half a century gives small evidence that there is any Providence directing the lives of the children of men. We are projected down the tunnels of our individual fates like peas along hollow fennel stalks, and except for an occasional and unaccountable windfall-fling from the hands of that wanton daughter of joy, Chance, there is no meddling with our ordered flight. The village atheist's reasoning has always been perfectly sound. If we moved and had our being under the eyes of an omnipotent God, then he would be indolent and callous beyond excuse. Every day it is possible to see happenings sufficiently stupid and cruel to estrange all sensitive spirits.

If we took this talk of the Christians seriously, how involved in its conception has been their God's sole attempt

to improve matters. Even the central rite he devised, so sophisticated and at the same time so barbarous, implied, I imagine, no great sacrifice *for him*, fathers being notoriously mean to their sons. It is a hard matter for anyone to believe that the Creator of mouse-tormenting cats, of thorn-impaling butcher birds, and of a fish with the shark's psychology could ever have begotten a child of such refined and passionate genius as Jesus is represented to have had. The temperaments of this father and of this son are too wide apart. Between the creator of the far-flung universe, roaring like a rutting bull, spitting fire like a tabby gib, and this young man who took for his symbol a lamb, disagreements would be inevitable—age against youth, darkness against light. The subtle crucifixion plan may well have come into God's head for quite other reasons than mortal salvation.

Let us pass over such fabulous foibles. The human predicament remains the same. We can do nothing better than to fling our bodies and souls before the god of life, passionately and without reserves, as oblations of golden wine are thrown from a cup. By acknowledging the value of tenderness and sensitiveness we shall grow wise enough to check the too exorbitant demands of our gluttonous desires, while at the same time we can still leave all free, treasuring every hour of our days as a chance beyond all chances, recreant never to the ancient atheistical mystery of existence, and with hearts full of worship, as are the tares and weeds of our garden, for the only tutelary influence that sways our planet, the life-giving Sun.

A THEORY OF LOVE

By ADAM GOWANS WHYTE

AFTER all that has been attempted in elucidation of love, it is startling to find the editor of a modern journal declaring that it "still remains the greatest of all mysteries."* Ever since man could think at all he has brooded upon love. Philosophers in all ages have examined it—a trifle shyly, perhaps, as befits those who seek serenity. Poets have been inspired by it, and have sung its qualities endlessly. Art has sought to reveal it; romance has found in it a master theme. Religion has borrowed from it some of its noblest images, and has even pictured the universe as its supreme manifestation. In later years science has taken a hand in the great inquest, probing the mechanism of sex and throwing a dry light upon the psychology and sociology of the ancient obsession. And at the end of this colossal effort we have, as a kind of ironic epitaph, the description of love as "a great unfathomed secret of human nature."

There is, of course, a sense in which love is a complete mystery. Life itself is a mystery; and the study of living tissue leads us to the equal mystery of the matter we call "dead." A grain of sand, or a speck of dust, or any atom therein, presents us with problems that still elude the utmost range of research and speculation. The light of knowledge, as it spreads, serves to deepen the sense of the surrounding mystery of existence, but that is no reason for denying the measure of illumination it gives us. Have we not moved a little beyond the stage at which an inspired writer could justly catalogue, as among the things which were too wonderful for him, "the way of an eagle in the air, of a serpent upon a rock, of a ship in the midst of the sea, and the way of a man with a maid"? Is it true, in the ordinary and not the metaphysical use of the words, that love is still the greatest of all mysteries?

According to the romantic convention, it is and should so remain. Romance deals with the higher manifestations of love, using them as the sport of imagination; its plots

* *Everyman*, October 1, 1931.

its visions might lose something of their glamour if a theory of love replaced the underlying sense of mystery. Nowhere more completely than in the realm of sex is science presumed to be fatal to the spirit of romance. Nevertheless, if we remember that science is not a creed or a dogma, but merely organized knowledge, we need not fear to look to it for such light as it may throw upon a phenomenon which romance has claimed as its peculiar province.

It is to science, at any rate, that we owe the liberation of the theme from the distortions of sentiment and the inhibitions that sentiment has supported. Thought, in this region of taboos and concealment, has become free ; and as the whole world, including the world of youth, is now speculating openly on every phase of it, the time has come to define, as clearly as possible, the broad principles that have emerged. If we cannot, at the present stage, construct a complete theory of love, we can at least erect a framework within which the erratic and confusing elements of the problem may be arranged in something like rational order.

Our forefathers found this an impossible task, because they had no idea of the history of love. They had, indeed, no conception that love could possess a history. Just as they looked upon the human species as formed in a single creative act according to a unique pattern, so they regarded all the attributes of the race as different in kind as well as degree from those possessed by animals. Similarities between the human and the non-human sections of life were recognized, but they were not considered to imply true kinship or a common origin. Consequently the phenomena of love were studied only in their latest and most elaborate form. The product of millions of years of evolution was examined without a thought about what had happened before the appearance of man. It was as if philosophers had set themselves to explain the full-grown oak while ignoring the acorn and the sapling. Small wonder, then, that ancient wisdom set the example to modern editors by describing love as the greatest of all mysteries.

The key to the problem lies in the study of the simpler forms of life. Anyone who hesitates to go to such humble organisms as the amoeba for instruction in so august a subject may be encouraged by the reminder that each one of us begins his individual existence as a single cell of the amoeboid type.

The amoeba, like the microbe, multiplies by simple division. After a period of growth it acquires a waist which becomes thinner and thinner until it breaks, leaving two amoebas, each exactly like the other and the original amoeba. This process represents the most primitive form of reproduc-

tion. There is no sign of difference at this stage ; there is not even a union of cells to form a new individual.

Such union, nevertheless, does take place at a very lowly stage in the evolution of life. Although it seems that the process of division might go on unabated for ever, there are certain simple forms of organism that acquire fresh vigour by the mingling of the contents of two cells. This is the process of conjugation, and it is comparable with the sexual process except that the two cells are precisely alike. Sex—the differentiation between male and female—makes its appearance at a later stage, when the one-cell animal has evolved into the many-cell animal.

The earliest many-cell animals are simply a colony of single cells, identical one with another. At a later stage differentiation takes place, certain cells becoming specialized for certain duties. While the amoeba can move, breathe, absorb food, digest it, and excrete it with any part of its microscopic body, higher types develop thread-like "oars" for swimming, a digestive tract, tough skin cells for protection, and so on. One of the penalties of this elaboration is that special cells must be provided for reproduction. The organism can no longer proceed by simple division. It must either bud off cells capable of forming a new individual, or each individual must evolve cells which, by union with other cells, establish a fresh generation.

Here we arrive at the dawn of sex. It is not a clear dawn, since nature adopts—notably in the plant world—a variety of means, both sexual and asexual, for the continuance of life. The first definite sign is the production, within a single organism, of two types of cell—one small and active, the other larger and passive. The union of these two forms the starting point of a new organism, and it is effected through the movement of the male cell, while the female cell provides, after the manner so familiar to us in the hen's egg, the food required to nourish the embryo life.

From this stage in the evolution of sex it is a short step to the appearance of individuals carrying only male or only female cells. Some plants have arrived at this definite separation of the sexes, but it is among the higher animals that we find it most widely illustrated. So far as our problem is concerned we may regard the separation as fundamental, since it is from this dichotomy in the main trunk of life that the difficulties and the alleged mysteries of sex took their rise.

From nature's point of view the mechanism of sex has only one purpose—the renewal of life. To effect this purpose the operation of the mechanism had to become an essential, an imperative part of the general life of the organism.

While for convenience we dissect animals into sex cells and body cells, and speak of special organs of digestion, locomotion, sensation, and so on, we know that all these portions of the living machine are linked together by a nervous system and their actions co-ordinated, and to some extent controlled, by the brain. If this co-operative system should fail to effect the necessary cell-union, the species would pay the penalty in extinction. Consequently we find, in the higher animals, the elementary process of the union of two cells elaborated until it involves the entire organism.

It is interesting to trace how, in the evolution of species, Nature has turned every faculty—touch, sight, smell, and hearing—to account in securing her supreme end. She has, further, mobilized the faculties of emotion and reason to achieve greater economy and certainty in the process of survival. Among fishes, for example, the typical method of reproduction is the wasteful one of spreading eggs and milt broadcast in the water, the result being left to chance without the faintest semblance of parental care. Even among the fishes, however, we have the curious case of the stickleback, where the male parent builds a nest and protects the eggs with invincible courage and devotion; and when we pass to birds and mammals we have innumerable examples of parental care extending beyond the protection of the embryo to the guarding and training of the young until they reach maturity.

The more we admit the moral quality of such manifestations, the more necessary is it to remember that they are not an accidental by-product of sex, but an integral part of it. The same contention applies to the æsthetic side of the courtship of animals—the song of birds and the displays of gorgeous plumage. Sex interpenetrates the whole being; and we ourselves, when we bring poetry and art and music and all the graces of thought and feeling to bear on the expression and pursuit of love, are merely continuing, with our more complex and capable faculties, a process rooted deep in the foundations of life and influencing every one of its manifestations.

We find, therefore, the clue to the problem of love in the division which Nature introduced at an early stage in our evolution. Although it is customary to describe each human being as an individual—that is to say, a complete entity—our history reveals the fact that no individual is really complete. Completion depends upon union with a complementary individual. Only by such means can life regain the unity that was broken when the evolution of sex began.

Regarded in this light, the characteristic phenomena of love lose their mysterious quality and become the natural result of visible causes. The sense of greater power, the

keener zest for life, the deeper appreciation of beauty, the awakening of emotions, the mental stimulus : all these testify to the realization of potentialities which were dormant in the isolated—and therefore incomplete—personality. So profound are the forces at work for the restoration of unity, and so thoroughly do they irradiate every phase of our nature, that we may perceive in the very advent of love the creation of a new being.

It is possible, of course, that such a scientific analysis of love will fail to convince some people of the reality of the alleged transformation. Love has its sceptics; to them the exaltation and the rapture are an illusion, a trick of the senses devised by Nature for her own ends. At the other extreme we have those who, on the basis of their individual experience, laugh at the illusions of the sceptic and do not trouble to examine the rationale of their good fortune. Between these opposing schools lie the majority of ordinary folk, who are aware—perhaps only vaguely—of their incompleteness, who have found a partial complement for their needs, and who retain a belief, half conviction and half unsatisfied desire, in the possibility of ideal love.

All these attitudes are explained by a corollary to the scientific theory of love. The need for unity is universal; even those who deny it are, by the very energy of their denial, giving evidence for its existence. On the other hand, the chances of complete unity being attained are infinitesimal. Astronomers have of late entertained us with calculations of how seldom, among the millions of stars perambulating space, a meeting of two spheres is likely to occur. The odds against such a coincidence are colossal; but are the chances any more favourable for a meeting, among the millions of human beings of all types, of two individuals who are strictly complementary over the entire range of their personalities? Ideal love demands resonance for every chord, and for the most delicate harmonics of every chord. When we consider how complex are even the humbler specimens of the race, how many items, especially those of the emotions and the mind, are included in their specification, we must realize that even a close approximation to perfect love is bound to be an exceedingly rare contingency. Since in actual life no one encounters more than a fraction of the number of potential partners, the working chances of a supreme success are far below the theoretical figure.

It follows that the majority of unions are of a partial character. Here and there in the gamut of attempted reciprocities there are silences or discords. Nature has its own way of rendering these imperfections more or less tolerable; the impulse that serves the ultimate purpose is powerful

enough to provide its own sanctions and to modify emotional and even mental factors so as to create a sense of fulfilment over a much wider area than the senses alone. Nothing is more familiar than the manner in which the basic attraction of sex distorts the judgment and masks the presence of jarring elements which in time are sure to reveal themselves. This process of adjustment is aided by our tendency, inherited from animal ancestors, to display in courtship. People in love dramatize their personalities; they act, for the time being, the parts of heroes and saints, parading qualities of devotion, courage, and unselfishness which belong much more to the ideal they wish to present than to their actual characters. Making every allowance for the power which love possesses of exalting and refining human qualities, this habit clearly implies an element of distortion that makes the harmony of the mutual relation to some extent artificial. From Nature's point of view the end justifies the means, but the means is none the less a fruitful source of disillusion, especially among the higher types to whom the psychological aspect of love is the dominant consideration.

From a study of the ordinary imperfect relationship we can deduce the main distinguishing feature of a perfect relationship. It is one in which each partner finds fulfilment for his or her personality, spontaneously and fully exercised. In other words, it is based upon absolute candour. Every reservation, every evasion, every suppression, and every disguise, whether in thought or in action, detracts from the emotional condition of communion. Unless both individuals are able to be wholly and fearlessly themselves, the reciprocity cannot be complete. The attainment of unity in the dual relationship demands that each shall contribute a complete personality. Indeed, the highest gift of love is the opportunity to be oneself in strength and weakness, in virtues and faults alike.

This ideal of reciprocal candour is not so difficult of attainment as may appear at first sight. According to the romantic conception of love, perfection, or at least some approach towards it, is the chief source of inspiration. Experience has proved over and over again, however, that the depth and intensity and the permanence of love do not rest on the proof of high moral qualities. It is a complement that people seek; consequently it is a complement that becomes their ideal. One of the most familiar of the so-called mysteries of love is the manner in which people who appear quite commonplace to the dispassionate observer become for one particular individual the most vital thing in his or her existence. The transvaluation is purely personal, because it is only in relation to one particular individuality

that each of us can allow our nature to expand to its fullest limits, to express itself to the uttermost, and to be accepted in its entirety.

The sole element of remaining mystery lies, perhaps, in the reason for the appearance of this fundamental division in nature—only, it may seem, in order that it might be resolved again into the unity from which it sprang. To this question science provides at least a working solution. The sex principle is everywhere associated with variety, with modification of form, and therefore with progress. Had it not been for the evolution of sex, the story of the evolution of life could never have advanced beyond its earliest chapters.

From this analysis we may conclude that, although the study of the origin and growth of sex clarifies the mystery of love, it emphasizes rather than detracts from the varied and adventurous qualities that form the fabric of romance. Love in its generic aspect is simple ; in its individual permutations it is endlessly complex. Regarded from either angle, it becomes, in the light of science, at once more comprehensible and of higher import. Science, the alleged destroyer of illusions, proves that the love which cynics declare to be a radical illusion is the supreme reality of existence.

THE RIDDLE

BY W. S. GODFREY

ATTEND not to explain it—you will fail ;
As all the schools and all philosophies,
And all the guesses of the would-be wise,
Have proved, and ever will, of no avail.
The human story is a motley tale
Wrapt in impenetrable mysteries ;
The “ why ” of things, their drift and destinies,
Their genesis—heights that we cannot scale.
Wisdom in narrower ambit finds employ,
To make the most and best of life her care ;
She leaves profundities not understood,
Sees the vast possibilities of joy,
Of sorrow, too, and suffering everywhere,
And ceaseless seeks to get and give the good.

CONSOLIDATING THE RATIONALIST ADVANCE

By ERNEST THURTLÉ

IN war it is an established piece of military tactics, after a position has been carried, to consolidate the gain. This was a feature of the military art which always seemed to me to have sound common sense behind it, and I think we Rationalists might well bear it in mind. In the war of ideas in which we are engaged the consolidation of gains is a matter of practical importance, and it is doubtful if we are doing this work in adequate fashion. Rationalism, by the vigour of its intellectual attack, has driven, and is still driving, Clericalism from position after position; but, having thus demonstrated its superiority, it appears to develop a weariness of well-doing. There exists an indifference which scorns to insist upon all the modifications in the body politic which should follow from the great change which has taken place in national opinion regarding religion.

What is the explanation of this attitude? I think it is that our determination to apply our argumentative triumphs to the practical affairs of life is weakened by a conviction that complete victory is only a matter of time. It was, I believe, the late Earl of Balfour who justified his lack of excitement over contemporary problems, which were furiously agitating those around him, by observing that there had already been one Ice Age, there would be another later on, and what happened in between really did not matter very much! It is not perhaps fair to say that there are many Rationalists who push to a similar Olympian extreme their indifference to the power still exercised on our public life by Clericalism, on the ground that its ultimate overthrow is inevitable. Certainly, however, there are those who feel no compelling urge to enter the lists and fight, in current controversies, for the triumph of Rationalism.

This is surely a fact to be regretted. In these days of the Church Militant there is real need of militant Rationalism. Undoubtedly there is a very general decay of belief in religion, for which Rationalism can take credit; but the evils which owe their existence to this religious belief have not

disappeared from the general life of the people to anything like the same degree. We can assent to the doctrine that all these things will ultimately disappear, but if their disappearance can be hastened by a generation or even a decade by our efforts ought we not to exert ourselves accordingly? If it were well done, 'twere well it were done quickly. A far better rule of life for the Rationalist than the Balfourian doctrine of Indifferentism, quoted above, is Huxley's dictum: "Whenever you see an imposture hit it on the head." No one need lead an idle life following this rule, for even now, in this twentieth century, there are many impostures with raised heads which would be all the better for a resounding Rationalist blow.

It is a plain, incontrovertible fact, for example, that what may be called official life in this country still proceeds upon the assumption that the great mass of people believe in the Christian religion; and it is, as we know, equally a plain fact that this assumption is a false one. Indeed, the nation is not infrequently publicly committed to doctrine which has been discarded by many Christians themselves. Recently there was unveiled in Flanders the last great Government war memorial to the fallen. It was a State ceremonial, and the British Army chaplain, speaking as it were in the name of the British people, referred in his dedication to the time when he and those present would meet the dead again "Face to Face." Thus the doctrine of individual survival after death was officially proclaimed. Now, we know that the great majority of our people have nothing to do with organized religion. How many of them believe in this doctrine thus officially proclaimed? How many, indeed, of the minority inside the Churches themselves now believe in this doctrine?

But this case of the War Memorial dedication is only one manifestation, among many, of the way in which the State continues to be identified with religious beliefs not representative of the nation. There is the religious character of the official Cenotaph ceremonial. Parliament continues to pay a chaplain, and to have prayers said before each of its sittings. The "blessings of Almighty God" are called down upon Parliament in every King's Speech. The armed forces have many chaplains, and there are compulsory parades for religious services. It is still taken for granted, by the nature of the forms to be filled in, that every inmate of a public institution, such as a prison, hospital, or poorhouse, has some kind of religion. The Bishops, the "Lords Spiritual," continue to exercise their rights as members of the House of Lords, and the Church remains linked up with the State.

These things are illustrations—the list is by no means

complete—of the continued domination of the “Christian nation” conception over a people which has become in great part sceptical. They continue to exist because they have not yet been seriously challenged. I believe, such is the changed state of public opinion, that they would not long survive a Rationalist challenge; and it is action of this kind which seems to be necessary if we are to have mirrored, in outward and visible change in the national life, the immense intellectual advance our cause has made. Bradlaugh, about two generations ago, challenged with great courage the obligation of a citizen to take a religious oath before he could take his seat in Parliament, and the obligation became a thing of the past. His example remains as an inspiration to us. Not every generation is so fortunate as to have a Bradlaugh in it, and we do not appear to have one now. That fact, however, should not dismay us, for the numerical strength of Free-thought, actual and potential, is to-day enormously greater than it was in Bradlaugh’s time, and therefore we do not need a giant to make our cause prevail. We need only to be united and resolute.

There are two conditions essential for success in a campaign against the anomalies of continued clerical domination which confront us from time to time. The first is that organized Rationalists must be convinced that this work of gathering in the harvest, by getting our argumentative triumphs reflected in the life of the nation, is work which is worth while doing. This is an indispensable condition, for a lead has to be given, and unless Rationalists give that lead no one else will. The second condition, provided the first is fulfilled, is that we must be able to mobilize popular support. In view of the entrenched nature of the interests against us, we can do little unless we can swing the big battalions to our side. Is this possible or not? I think it is.

A campaign against ecclesiastical pretensions in general would not stir our people—generalities and theoretical arguments normally leave them cold; but they can be aroused on concrete issues. On particular questions, therefore, where Clericalism is in conflict with the opinion of the masses, I believe we could arouse popular interest and support, naturally choosing our times and seasons with discretion. On a number of current issues the cause of Reason is actually the popular cause.

One obvious illustration of this harmony between the Rationalist outlook and popular opinion is the broad issue of Sunday freedom. On this issue our views are clearly those of the big battalions. In their attempts to curb the liberty of citizens on Sunday, simply because that day has special traditional inhibitions for them, the Churches are

certainly putting themselves in opposition to popular desires. Even in London the people are still hampered by Sabbatarian chains. Their right to attend theatres on Sunday is denied them, and their right to enjoy themselves at cinemas is compassed about with indefensible restrictions. Outside London the position is much worse, for the dwellers in most provincial towns, large and small, are in complete ecclesiastical bondage so far as Sunday is concerned. And neither in London nor elsewhere does this position represent the desires of the people. They find their restrictions irksome, and would fain be free ; but so far their wishes have not prevailed against the organized power of the Churches, mainly because they have lacked a lead. We Rationalists have it in our power to give this lead, and so lift fights for Sunday liberty above petty issues of compulsory charity and sordid questions of the profits of proprietors of theatres and cinemas to the unequivocal assertion of our right to freedom from clerical domination.

We know what clever tacticians the Churches have been in the past, buttressing their institutions by linking them up with the great occasions of birth, education, marriage, and death. It is impossible to over-estimate what they owe to sentiment and associations created in this way, now that the intellectual foundations of belief are becoming so unstable. Even so, they are in a particularly vulnerable position from the popular standpoint, for in their opposition to freedom they are against the main stream of national inclination. This is Rationalism's opportunity. Our tactical position is extraordinarily advantageous, inasmuch as we can attack Clericalism while enjoying the unwonted luxury of being on the popular side. To exploit that situation to the full we should identify ourselves vigorously with every specific revolt against clerical denial of liberty upon which there is common agreement within our own ranks. Even with that essential qualification, in view of the diversity of outlook to be found among us, we could find many fields in which to do battle, and our victories would not be few.

THE PRINCIPLES AND PRACTICE OF PERSECUTION

BY SIR ALEXANDER G. CARDEW

IT cannot be too often or too clearly repeated that the one Christian Church which still unblushingly stands forth as the advocate of intolerance and persecution is the Church of Rome.

In the past the Protestant bodies were just as intolerant and cruel as the Catholics. Roman Catholic writers enjoy drawing attention to the bloodthirsty sayings of Luther, to Calvin's burning of Servetus, and to Melancthon's approval of that infamous deed. But, though Protestantism at that period had not the slightest claim to superiority over the Roman Church in the matter of toleration, the irresistible logic of its position has gradually forced Protestant sects to a more reasonable view. Minor outbursts of fanaticism from time to time occur even to this day, but there can be no doubt that intolerance is now definitely condemned and disowned by Protestant bodies.

Not so the Church of Rome. That institution prides herself on retaining unchanged the same principles and the same point of view as she held in the Middle Ages. As Professor Bury has said, she still presents "a heroic resistance" to the liberal ideas of the nineteenth and twentieth centuries. Nothing illustrates better the incurable levity and inconsistency of the popular mind than the fact that this medieval survival should still flourish in a world which rejects some of her most deeply cherished principles.

These principles are clearly set forth, though of course in studiously discreet and moderate language, in that learned and authoritative work, the *Catholic Encyclopædia*. In the article on "Toleration" in that work the Rev. Dr. Pohle gives a careful analysis of the meaning of "theoretical dogmatic toleration." This, he says, can only be the outcome of indifference towards the truth, and in fact amounts to a countenancing of error. Hence he concludes that such toleration is quite indefensible, and that its opposite—namely, theoretical dogmatic *intolerance*—not only cannot be considered to be wrong, but is in fact "among the self-evident duties of every man who recognizes ethical obligations"

and "is a prominent characteristic of the Catholic Church." Dr. Pohle suggests that such theoretical dogmatic intolerance is often confused with other forms of intolerance; but it is obvious that, if intolerance is thus authoritatively laid down as a duty, the plain man is not very likely to distinguish between one shade of intolerance and another.

In fact, Dr. Pohle's own statements in other portions of his article lead very definitely to the translation of theoretical intolerance into practice. Nowhere, he says, is dogmatic intolerance so necessary a rule of life as in the domain of religious belief, since for each individual his eternal salvation is at stake. "Just as there can be no alternative multiplication tables, so there can be but a single true religion." The Church, says Dr. Pohle, is possessed by "the imperturbable conviction that she is endowed with full power to teach, to rule, and to sanctify, and regards dogmatic intolerance not only as her incontestable right but also as a sacred duty." After this, it is not much good for Dr. Pohle to tell us that toleration is a duty of the State. The Church evidently regards it as an unavoidable necessity to which in these evil days she unwillingly submits.

An even clearer view of the Roman Church's attitude is given in another article in the *Catholic Encyclopædia* by the Rev. Dr. Wilhelm. He sets out from the proposition that "the first law of life, be it the life of plant or animal, of man or a society of men, is self-preservation.....The jealousy with which the Church guards and defends her deposit of faith is therefore identical with the instinctive duty of self-preservation and the desire to live." Hence any body, such as the Roman Church, must ruthlessly carry on the struggle for existence. Subject, like other organisms, to the competition of rivals, she is as likely to show mercy or compassion to them as any other animal or vegetable growth, a tiger or a parasitic creeper. "A kind of iron law," says a third writer in the *Encyclopædia*, the Rev. J. Blötzer, "would seem to dispose mankind to religious intolerance." Dr. Wilhelm sets out the biological explanation of this iron law, which he declares applies not only to the Roman Church, but to all heretical sects. The Roman Church, at any rate, has no intention of departing from this law of Nature—"Nature red in tooth and claw."

Of course, the Church justifies her attitude by the assumption that her "deposit of truth" is the one certain and infallible revelation in the world's history. "In the Catholic Church," says Dr. Wilhelm, "this natural law has received the sanction of Divine Promulgation." The Church is convinced, Dr. Pohle informs us, "that she was founded by the God-Man Jesus Christ as the 'pillar and ground of

truth' (1 Tim. iii, 15)." Once grant these assumptions, and intolerance flows from them like the deductions in a proposition in Euclid. Indeed, it becomes an ethical principle, a result of the love of truth and of the absolute duty of maintaining truth and putting down error. As Dr. Pohle says, "the Church must be as intolerant as the multiplication table."

Certain further deductions, less vital but quite interesting, are drawn by the Roman Catholic casuists of the *Catholic Encyclopædia* from their initial assumptions. One of these is that Holy Church *cannot* be guilty of persecution. "Persecution," says the Rev. James Bridge, S.J., "may be defined in general as the unlawful coercion of another's liberty or his unlawful punishment." But the Church, as the accredited and infallible ambassador of God, has an undoubted right to coerce her subjects, and hence no coercion that she can use can ever possibly be unlawful or amount to persecution. Other people can persecute her, and are then guilty of the most heinous sin; but, whatever she does, she remains spotlessly pure and innocent. An interesting sidelight on this view is that, according to the Rev. James Bridge and many far greater authorities in his Church, everyone who has undergone Christian baptism is a subject of the Catholic Church. Even the non-Catholic Churches of to-day, the reverend gentleman informs us, are strictly speaking her subjects, though for reasons of convenience the Church kindly refrains from pressing the point. According to strict Catholic principle, everyone who, in helpless infancy, may have been submitted to the rite of baptism is a subject of the Roman Church, and nothing that the Church could do, whether by rack, axe, or faggot, would amount to persecution on her part.

A further consequence of the same ingenious process of reasoning is that while those who were put to death by cruel persecutors, such as Queen Elizabeth, for their adherence to the Catholic faith are of course at once admitted to the noble Army of Martyrs, and are blessed and beatified accordingly, those persons whom the Roman Church put to death for their religion were not martyrs at all. A martyr is someone who suffers for the truth. The Roman Church has an absolute and indisputable monopoly of religious truth. Therefore no one can be a martyr unless he is a Catholic. Those put to death by the Roman Church are not martyrs; the most that can be said for them was that they were perhaps sincere; as the Rev. James Bridge puts it, they were "no more than pseudo-martyrs," just as the Roman Church's act in putting them to death "cannot be called persecution." It is merely a legitimate exercise of the Church's undoubted authority.

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These significant examples of the change in the meaning of words when used by Roman Catholics enable us to appreciate better Mr. Hilaire Belloc's amusing proposition, that "true history is history written in accordance with Catholic philosophy." It perhaps also explains why Roman Catholic writers lay so much stress on the necessity of applying imagination to the due apprehension of Roman Catholic times, such as the Middle Ages. With the aid of Roman Catholic imagination, Roman Catholic philosophy, and Roman Catholic terminology, we arrive at what Roman Catholics such as Mr. Belloc term true history. At any rate, such history has one conspicuous merit—it possesses the charm of novelty. If it is not exactly history, it can be included in the realm of romance.

Other aspects of these Roman Catholic principles as enunciated in the *Catholic Encyclopædia* may be given a passing mention. As the teachings of the Roman Church are a supernatural message from the Creator to his creatures on earth, the missionaries of that Church have an indefeasible right and duty to preach this message everywhere. No pagan or other State can have any right to interfere with the performance of this duty, even though it may consider the Christian message to be not merely otiose, but subversive of established authority. When, after extreme provocation, the Japanese Government in the seventeenth century executed a party of Roman Catholic priests who insisted on returning to Japan after being deported and explicitly warned of the consequences of return, the Government was guilty of odious and horrible persecution. But if a body of Buddhist, Muhammedan, or Jewish priests were similarly to enter a Catholic country, and were seized, racked, and executed by the Holy Inquisition, that would merely have been a reasonable exercise of the Church's divine powers.

Such is the Church's *theory* of persecution. It would of course take ten times as many volumes as there are in the *Catholic Encyclopædia* to give even a brief account of the Roman Church's *practice* of that gentle art. A single instance of her record in this matter may, however, be instructive, and not without interest.

It is not easy for persons brought up in familiarity with the current versions of the Christian story to throw their minds back to the period before the legend of the Miraculous Birth of Jesus had been invented. It is generally admitted, however, that neither St. Paul nor the author of the Second Gospel had ever heard that story, and that therefore there was a stage when Jesus was regarded as merely the son of his parents in Galilee. The most prominent event in his history was then his baptism by John. It was at this baptism

that, according to the story, the Spirit of God descended on him, and that God adopted him as his son. In the oldest texts of the Gospels the voice which Jesus is supposed then to have heard declared "Thou art my Beloved Son ; this day have I begotten thee." Thus the baptism was, as it were, the moment of the prophet's spiritual birth, as it was undoubtedly the commencement of his active life ; and naturally it was regarded as the great event in the Church's history. At this period the baptism of Jesus, which was celebrated on the sixth of January, was the chief festival of the Church, and his followers, noting that Jesus was baptized at the age of thirty, regarded that as the appropriate age for baptism. The idea of baptizing infants had not yet been thought of, and even the baptizing of children of seven or eight years was stoutly opposed by Tertullian in his tract on Baptism written about 140 A.D.

When the legend of the Miraculous Birth originated is unknown, but as soon as it arose its appeal to the popular love of the marvellous gave it an immediate success. The old Adoptionist theory, which dated Jesus's adoption by God from his baptism, soon wilted before the more picturesque story of the Virgin Mother, the Star in the East, and all the other romantic incidents of the now familiar history. In due course the new mythology was incorporated in the First and Third Gospels ; and Christmas Day, the birthday of Jesus, a date hitherto unknown, was fixed for the twenty-fifth of December as being the close of the winter solstice, and so coinciding with old Pagan festivals to the sun.

But in parts of Asia Minor people long clung to the earlier or Adoptionist story. Christmas Day was, indeed, not generally introduced until 350 A.D., though the story of the Virgin Birth was adopted earlier. At the first Council of Nice in 325 the Adoptionist view was definitely condemned as heretical. Persecution of the heretics, now known as Paulicians, naturally followed. As they were opposed to images, they enjoyed a respite under the iconoclastic Emperors ; but in 750 Constantine V caused large numbers of the sect to be deported from Asia to Thrace, so that they might serve as a bulwark against the Bulgarians and Slavs. Yet even here the orthodox Church could not refrain from persecuting them. In the ninth century the Empress Theodora is said to have put to death a hundred thousand, and at last the harassed sect took refuge in Muhammedan territory. Others lived among the now Christianized Bulgarians, and the Paulician faith was widely dispersed both in the Balkans and in Asia. From time to time Paulician emissaries found their way into Western Europe.

Early in the twelfth century we hear of a new heretical

sect in Spain and elsewhere which called itself the Cathari or Pure, and which seems almost certainly to have owed its origin to emissaries of the Bulgarian heretics, now known as Bogomils. The Cathari were opposed to infant baptism, partly, it may be presumed, because of the late date of Jesus's baptism and partly for the very sensible reason that a baby of a few days old cannot understand the nature of the religion into which he is supposed to be initiated. They therefore postponed the sacred rite of initiation, often to the very end of life, so as to avoid post-baptismal sin, and it became a ceremony, known as the consolamentum, which somewhat resembled the Catholic Extreme Unction. They also completely rejected the Roman Catholic Church, with its elaborate ceremonial, its wealth and corruption, its indulgences or licenses to sin, its images and relics, and its other abuses. They aimed at a return to what they believed was the pristine purity of the Apostolic age. The priests of the sect, who were known as Perfecti, were pledged to the most rigorous asceticism, which rejected animal food and forbade all forms of sexual indulgence, including even marriage. The ordinary adherents—or Hearers, as they were called—were not expected to observe so severe a regime; but even to them all oaths and violence were forbidden, while industry and sobriety were inculcated. There is contemporary evidence that these precepts were observed, and that the Cathari were generally remarkable for their good conduct and their purity of life.

These characteristics contrasted so strongly with the evil behaviour of the Catholic priesthood that the Catharan religion spread far and wide. In the provinces then ruled by the Counts of Toulouse the adherents of the new religion outnumbered the Catholics, and the sect came to be called Albigenses, from the town of Albi, not far from Toulouse. They also increased considerably in Northern Italy and in other regions, until towards the end of the thirteenth century there seemed to be a real possibility that they would be able before long to meet the Romanists on even terms and perhaps get the better of them.

Then Rome put into practice those biological principles which, as we have seen, the Rev. Dr. Wilhelm expounds in the *Catholic Encyclopædia*. She determined to exterminate her rival, and to illustrate the law of the survival of the fittest by surviving herself. She had during the previous two centuries—the eleventh and twelfth—made fitful attempts to suppress these insolent heretics. She had done her best to discredit them by abuse, calling them Manicheans, though it is now recognized by competent authority that the name is quite misleading, and by charging them with all sorts of

nameless vices, thoroughly incongruous with the ascetic teaching and habits of the heretical sect. She also tried to persuade temporal rulers, such as the Count of Toulouse, to proscribe the heretics, and when he displayed unwillingness to persecute his subjects she excommunicated him.

Still little progress towards checking the growth of heresy was accomplished, and Innocent III, an able and ambitious Pope, decided on stronger measures. In 1204 he invited Philip Augustus, King of France, to put himself at the head of a crusade against the Albigenses, which would have the double advantage of exterminating the heretics and of bringing the rich territories of the Count of Toulouse under French control. As further inducements, the Pope promised to all who joined in the war the full Indulgences and pardons for sin which were obtainable by the far more arduous task of an overseas campaign against the Saracens in Palestine; while in Languedoc, as the southern provinces of France were called, there were an unwarlike population, prospects of ample plunder, and the chance of acquiring landed estates.

Philip Augustus had, however, other irons in the fire, and he refrained from accepting Innocent III's tempting offer both in 1204 and the following year. In 1208 fortune favoured the Pope. One of the Papal legates, who had excommunicated Raymond, Count of Toulouse, was murdered, and this outrage on an ecclesiastic gave an excellent excuse for a holy war. The King of France now sanctioned the crusade, and a French noble, Simon de Montfort, father of the famous Englishman of the same name, was given the command. Montfort was a man of fanatical temperament and considerable military ability; and a formidable army, said to have amounted to a hundred thousand men, assembled at Lyons. Even then a successful defence of the Languedoc might have been possible had Raymond, Count of Toulouse, boldly put himself at the head of his people and mustered all the forces of the south to meet the invaders. He was, however, a weak and vacillating prince who thought to evade the vengeance of the Church by leaving his heretic subjects to be murdered. He little knew the character of Innocent III, who played with him skilfully and heartlessly. He was induced to surrender a number of strong fortresses into the hands of papal representatives, and when the crusading army entered his territories this miserable poltroon actually joined them and for a time was received by the treacherous Papists with apparent amity, though his ruin had already been decided upon.

The Crusading army advanced into the Languedoc, and one of the most cruel and destructive wars in history was let loose on the peaceful and prosperous country of the Count of

Toulouse. Béziers, one of the largest towns, was first attacked, and was carried with little resistance. Following perhaps the German principle of Frightfulness, the entire population was put to the sword and the town then burnt. A story is told that when the Papal Legate with Montfort's army was asked what was to be done about the Catholics in the population of Béziers he replied : "Slay all : the Lord will know his own." Twenty thousand people are said to have thus perished, and the fate of Béziers undoubtedly struck terror into the people of the Languedoc. A report of this glorious achievement was sent to Innocent III both by the Papal Legate and by Montfort, and the Pope replied with high commendation and prayers for yet further successes.

The army of God then advanced to Carcassonne, a strong position, but rendered untenable through deficient water supply. It resisted for a time, however, and the Crusaders were themselves in difficulties owing to lack of supplies. Finally the town surrendered, and the people were allowed to leave it with their lives, but abandoning all their possessions. The papal representatives wrote a special letter to the Pope to apologize for this unseemly leniency, which was explained as being due to unavoidable necessity.

The period of forty days for which the Crusaders had engaged was now running out, and large numbers of them returned home laden with booty and spiritual benefits. Simon de Montfort, however, remained. He hoped to carve out a principality for himself in this pleasant southern land, and he doubtless also desired to secure further rewards in heaven by the massacre of additional heretics. He advanced with his remaining forces to Bram, a fort ten miles from Carcassonne. This was captured, and Montfort celebrated the occasion by blinding a hundred of the captured garrison, leaving, however, one eye to the Commandant to enable him to act as guide to the others. At Minerve the Catholic population was spared and the heretics given a choice between death and recantation. Of the Perfecti only very few recanted, and all the rest were burnt alive.

Similar scenes of horror and bloodshed took place through the Languedoc, and the famous Provençal civilization was systematically and thoroughly destroyed by the still barbarous soldiers of Northern France. The Albigenses were massacred or burnt until all open resistance was at an end, and then the Inquisition was let loose on the country to ferret out and put to death under forms of law any heretics who had hitherto escaped. Count Raymond of Toulouse lost three fourths of his territory, and in the next generation the whole country became annexed to the growing kingdom of France. Such was the course of events instigated and

engineered by Pope Innocent III and his successors in their sacred office as Vicars of Christ.

Nobody, it is well known, is so vindictive as he who has done an injury. The Roman Church, having exterminated the Albigenses, proceeded systematically to blacken their character. She also industriously destroyed their sacred books, so that none now survive. To this day Roman Catholic writers cannot mention the heretics without abuse. Dr. Pohle writes of "the orgies of the Catharists and Albigenses," although these orgies existed only in the imagination of their Popish enemies. These disruptive sects, he says, attacked marriage, the family, and property. The truth is that the Perfecti, or Catheran priests, were pledged to celibacy, as the Roman clergy were supposed to be; the statement that they attacked the family or property is simply untrue. Another writer who shows the true Catholic temper, though he calls himself an Anglo-Catholic, writes of them as "the vile Cathari." Such abuse comes ill from a Church whose annals are decorated by the record of a Rodrigo and a Cesare Borgia.

It is reassuring, in these circumstances, to be told by Catholic authorities that they would not now propose to treat heretics as the Cathari or Albigenses were treated in the thirteenth century. The penalty of death for heresy, says one Roman Catholic writer, in accents of regret, has disappeared, but it would still be allowable for any Catholic State to expel from its territories anyone who would not conform to its religion. The Church may no longer use all her old weapons, but she maintains all her old claims to have a right to use them. Dr. Wilhelm significantly tells us that "toleration only came in when faith went out; lenient measures were resorted to only where the power to apply more severe measures was wanting." In Protestant countries, and especially in England and America, the mailed fist is kept as much as possible out of sight. Thus orders have been issued that the Index of Prohibited Books, one of Rome's medieval devices, is not to be enforced here. But no one should have any doubt as to the purpose planted deep and ineradicably in the hearts of Catholic authorities: viz., by persuasion, fraud, or force, to subject all intellects to "Catholic truth"—i.e., to the dogmas which this syndicate of priests, whose headquarters are at Rome, is pleased to promulgate. The future of the human race and the freedom of the human mind depend on the defeat of this insidious conspiracy.

SECULARISM AND MORALITY

A REPLY TO CANON W. G. EDWARDS REES

By ARCHIBALD ROBERTSON

[In the *Contemporary Review* for May, 1932, there appeared an article by the Rev. Canon W. G. Edwards Rees entitled "Is a Secular Morality Possible?" Canon Rees declared that the collapse of supernatural religion would involve the disappearance of morality. He argued that Hedonist, Utilitarian, or Positivist ethics failed completely to answer the question, "Why should I be moral?" and that any kind of secular morality was foredoomed to failure. Only by basing conduct on an "infinite ideal" emanating from an "infinite author" could man preserve the social cohesion necessary to save the race from perdition.

The following reply was sent to the *Contemporary Review*, but was refused publication.]

IF we are able to credit the diagnosis of Canon Rees in the May issue of the *Contemporary Review*, humanity is in a dire predicament. "The foundations of the earth are out of course." Supernatural religion, eaten away by the "acids of modernity," has all but collapsed; and morality, "the key-stone of the arch upon which civilization is built," is likely to disappear in the ruins. Unless the old orthodoxy is salved, or unless "another orthodoxy" is discovered "with as little loss of time as possible," man will cease to be man, if indeed he does not perish altogether from the face of the earth. For "morality without God is not morality at all"; a secular morality, that is to say, is impossible.

Before venturing to agree or to disagree with the verdict of Canon Rees an attempt to define our terms seems advisable. It is possible that some of us do not mean by "morality" what Canon Rees means. If the term admits of more than one significance, it may be that morality in one sense of the word is indeed bound up with supernatural religion, and would be involved in its collapse, but that morality in another and equally legitimate sense is independent of such support. It should be noted that the etymology of the word does not necessitate, though it does not exclude, reference to supernatural sanctions. The Latin *mores* means simply "manners." The *ethiké areté* of which Aristotle discourses in the *Nicomachean Ethics* means no more than "good behaviour."

Dikaiosyné, iustitia, righteousness, mean essentially conduct according to *rule*. It may be argued that this concept gains added force from a religious background, and even, as by Canon Rees, that it is null and void in the absence of that background. But by itself it connotes nothing more than a social rule of the road. Morality in this primary sense may be defined as consideration, in the satisfaction of our wants, of the equal or greater wants of others.

Canon Rees's argument aims at showing that such consideration has no logical basis except in supernatural religion, and that without the aid of supernatural religion it will inevitably wither away. He contends that hedonism and utilitarianism are unable to provide any sanction for good behaviour, except by illegitimately introducing factors "borrowed without acknowledgment from nobler doctrines of conduct"—that, in short, they fail completely to answer the question, "Why should I be moral?" Canon Rees appears to think that this failure is peculiar to secular morality. May I, with all respect, suggest that it is beyond the power of any morality, secular or religious, to answer a question which is in the nature of the case unanswerable in terms of ethics? It would be interesting to know how the Canon himself would deal with anyone who put such a question to him. So far as I can gather from his article, his reply would be something like this. "You must be moral because morality is in the nature of things. You must be moral because morality is the road to perfection. Finally, you must be moral because God commands you to be so." But suppose the questioner (who is *ex hypothesi* non-moral) retorted: "I agree that morality, like shoes and sticks and sealing-wax and cabbages and kings and the whole choir of heaven and furniture of the earth, is in the nature of things. Of course it is; otherwise it would not exist. But immorality too exists, and is therefore in the nature of things. Why should I choose one rather than the other? As to perfection, I don't want to be perfect, and I think it would be a very dull world if everybody was. Finally, will you please inform me why I should obey God? Three of the most striking characters in poetry and drama (the Prometheus of Aeschylus, the Satan of Milton, and the Don Juan of Molière and Mozart) owe their hold on our imagination precisely to this fact—that they defy Omnipotence to the end and take their punishment gamely. I choose to be their disciple."

I think Canon Rees would find it very difficult to furnish such an objector with reasons for moral conduct. He might, it is true, by sufficiently dilating on the terrors of punishment beyond the grave, persuade him that discretion was the better

part of valour and conformity the best policy. But surely Canon Rees does not ask us to believe that the threat of hell is the true answer to the question, "Why should I be moral?" He would be the first to reprobate any utilitarian who used the fear of prison, social ostracism, or obloquy in a similar fashion. Canon Rees would insist that enlightened self-interest and morality were very different things, and that the substitution of an appeal to prudence for the categorical imperative was an imposture not to be tolerated. He cannot, therefore, regard the threat of punishment in another world as a genuine spring of moral motivation. Apart from questions as to its truth and efficacy, actions so induced have manifestly no moral quality whatever.

So far, therefore, as the non-moral objector is concerned, a religious ethic and a secular ethic are in exactly the same case. To the question, "Why should I be moral?" postulating as it does an initially immoralist attitude in the inquirer, the theologian and the secularist alike are obliged to answer in substance: "Because it will be made unpleasant for you if you are not"; the sole difference being that, while the secularist counts on the forces of society (including, of course, public opinion and the less ponderable forms of social pressure) to deal with anti-social behaviour, the theologian calls in the next world to redress the balance. Whether in doing so he really serves the interest of morality may well be doubted. A study of the history of the world in ages when faith was unquestioned and supreme suggests that the efficacy of belief in the supernatural as an incentive to right conduct has been greatly overrated. And it is surely significant that as belief in another world has declined public sensitiveness and attention to the crying evils of *this* world, particularly poverty and war, have proportionately increased.

As a matter of fact, preoccupation with such a conundrum as the question, "Why should I be moral?" indicates an interest in logic rather than in life. We are social animals, obliged from the cradle to the grave to rub shoulders with and to take account of our fellow creatures, and agreeable relations with them are essential to our happiness. Moralists of the school of Canon Rees too often write as if the human individual were an unsocial being, whose nature it was to find happiness in utter disregard for the claims of others, and who must be deterred from this course by supernatural or transcendental inducements. Such individuals exist, but they are cases for the criminologist or the alienist. For the vast majority of us life is an affair of "give and take." We discover very early that there is a social rule of the road, and that if we do not consider other people they will not consider us and we shall come to grief. If we are healthily constituted

and decently trained, such consideration becomes a second nature. In this way morals—that is to say, *mores* or social good manners—are built up. The problem to be faced is not the solution of the conundrum, “Why should I be moral?” but the assurance to all, by means of eugenic, social, and educational reforms, of such a healthy constitution and sound training as will render the question pointless and meaningless.

The truth, as already hinted, is that writers of the school of Canon Rees and of the utilitarian school use the term “morality” in different senses. For the former, morality without a supernatural sanction is “not morality at all,” but “at best methodized convenience.” Our transcendentalists can have no truck with mere social good manners. The *ethiké areté* which was good enough for Aristotle is not good enough for them. Morality for them is a law revealed to man by his Maker, “graven on tables of stone or on the living tablets of the soul,” or it is nothing at all. It is likely enough that morality in this special and esoteric sense will disappear. Certainly, if the collapse of supernatural religion is imminent, its attendant ethic cannot be expected to survive for long. But is it necessary to hold, with Canon Rees, that its extinction would mean the end of civilization and the dehumanization, and perhaps extermination, of mankind? The social rule of the road antedates the Pentateuch, and can be observed and, if need be, enforced independently of the thunders of Sinai.

The gulf which separates the Canon’s conception of morality from the modern conception is well illustrated by his passing reference to the animal kingdom. “The brutes,” we are told, “have no need of morality properly so-called, except so far as man has induced it in them; the law in their members suffices for them. But man made in God’s image—man, who can fling defiance in the face of his Maker; man, who in the course of evolution is learning more and more to look before and after—man is different.” The ant-heap, that perfect example of a co-operative commonwealth, that envy of human reformers, has no lesson for Canon Rees. The only animals to whom he concedes “morality properly so-called” are those like the dog, whom man has tamed and intimidated into serving *his* interests rather than their own. Morals, for the Canon, mean subjection to the will of a master—not social co-operation, however perfect. He recognizes no moral quality in *that* unless somebody is made thoroughly uncomfortable in the process. What an ethic!

Moreover, Canon Rees’s views are rooted in a dualistic metaphysic which thoughtful minds find less tenable with every year that passes. He opposes the moral law, as

exhibited in man, to "the law in their members" which suffices for the brutes. But the moral law *is* a "law in our members." These absolute antitheses between mind and body are out of date. The incentives which actuate us are neither purely physical nor purely psychical, but psycho-physical. Hunger and love, anger and fear, are just as much mental states as are the pricks of conscience. If these feelings have a material aspect as physico-chemical changes in the organism, so assuredly has the moral sense. Man is neither a mere mind nor a mere body, but a mind-body, and in every phase of his behaviour both aspects of his being are involved.

It is regrettable that Canon Rees, in his zeal for a supernaturalist conception of ethics, should disparage, if indeed he does not totally ignore, the moral lessons that are writ large in physical life. The "law in our members" is a law of co-operation. Each of us individually is a co-operative commonwealth, in which billions of constituent cells subserve the ends of the whole in a manner which puts our fumbling social and political experiments to shame. Too many moralists have made the mistake of assuming that co-operation for a common end was unnatural to man, that his aboriginal condition was a war of all against all, and that social behaviour had somehow to be miraculously imposed on him from above. Nothing could be further from the truth. Man is himself a product of co-operation; anthropologists have no knowledge of a time when he did not practise mutual aid; and if to-day, as the facts of poverty and war bear witness, his adaptation to his environment is sadly incomplete, it is because his evolution is not finished, but is still going on.

Now, the Canon will have none of this. He categorically denies that evolution is bearing us to greater happiness. It is difficult to see how such a dogmatic denial can be justified. Only the future can show what evolution has in store, and the future lies to a large extent in our own hands. Dogmatic pessimism in these circumstances is unhelpful as well as unwarranted. But, says Canon Rees, "there is always the grisly spectre of death" to mock our efforts. Since we must individually perish long before the social goal is reached, why should we be altruistic? "If personality is but a wavelet on an infinite sea, transient and of no intrinsic value, why should debts be discharged, when it is convenient not to discharge them?"

I am afraid the only possible answer to this hypothetical questioner (for I cannot believe that the Canon here voices his own feelings) is: "If you really take that view of the matter, please yourself. Try living for yourself alone, and

much joy may it bring you ! There are plenty of us who find the social future more interesting than you appear to do. Provided your egoism does not vent itself in anti-social behaviour which would necessitate your being put under restraint, we shall leave you to your own devices, and continue working together to create a better world on a basis of scientific humanism than the ages of faith have bequeathed to us. You will go your way, and we ours ; and we shall see who gets most out of life." It comes to this : either a man is capable of interest in things outside his own petty personality or he is not. If he is not, I can suggest no recipe for making him so. He is a pathological case. Leave him alone, and pass on. But if he *is* capable of such objective interests, he will no more be deterred from them by the fact that he will one day die than he will be deterred by the same fact from eating and drinking. The impulse to identify ourselves with a cause and to rebuild the world nearer to the heart's desire is part of the evolutionary appetite, and is as natural to those who possess it as hunger and thirst.

The fact is that such queries as "Why should I be moral?" "Why should I consider others?" "Why should I work for a posterity which I shall never see?" are not the sort of questions which occur to practical people. They are cobwebs spun in the philosophical class-room, where men are less interested in the actual business of life than in the quest for a logical reason for living. That quest is in its nature futile, since before we can reason we must live ; and life, for human beings, presupposes co-operation, mutual goodwill, and a social rule of the road. Morality in this sense existed before supernatural religion had emerged from primeval magic, and will continue to exist irrespective of the metaphysical credos which men may accept or reject from time to time. Instinctive needs are independent of intellectual beliefs.

Morality in Canon Rees's sense—the morality which consists in obedience to an assumed supernatural authority—is doubtless doomed. But will the world be the worse for that? What is this awe-inspiring code, the obsolescence of which is said to portend general ruin and perdition? A collection of taboos current among uncultured Semites two thousand years ago, amplified by the glosses of theological exegetes from that day to this, and now palmed off upon us as "dictates of the moral consciousness" which are to be eternally exempt from utilitarian criticism. Some of these imperatives, as was to be expected, are part and parcel of the social good manners necessary in any organized society ; and these are in less danger of submersion than Canon Rees appears to think. Others, including many of those which relate to sexual life, stand convicted on candid examination

of causing widespread and totally useless suffering. They are invoked as pretexts for keeping in being an inhuman and obsolete marriage law, abetting the uneconomic multiplication of poor families, persecuting the sexually abnormal, and tolerating the horrible and preventable ravages of venereal disease. The secularist finds that *his* moral consciousness revolts against a so-called ethic which produces these results, and he makes no apology for opposing to it his own humanist and utilitarian ideology. If the morality championed by Canon Rees goes down before the attack, it will be because life has evolved a new morality, by which the old is judged and condemned as no longer adequate to the needs of man.

THE ETERNAL QUEST

By CHARLES T. GORHAM

BEHOLD, I seek Thee vainly ! Though I flee
To earth's remotest bounds, Thou art not there ;
Thou art not in the great sun's noontide glare,
Nor in the roaring of the wintry sea.
The moon and stars and tides reveal not thee ;
The lightning and the thunder's voice declare
No tender heart, no loving Father's care ;
Only Law's dread, unchanging face I see.

Shall I repine because I cannot sound
Great Nature's depths ? From age to age men chase
Phantoms that ever fade. Were it not well
To cease vain longings for the heavenly face,
And clasp the kindly human forms around,
Content among mine earth-born mates to dwell ?

THE ISOLATION OF KNOWLEDGE

BY PROFESSOR H. LEVY

A RATIONALIST denies the efficacy of Heavenly aid in the solution of Earthly problems. To him the universe is a closed system, a continually changing matrix of events embracing the celestial bodies, Man, and his social system. Within the limitations imposed on him by his material surroundings, by the application of his brain and his brawn, he has to work out his own salvation in the struggle with the forces of Nature. Not least among the factors with which he has to contend are the phantasies of his own mind and the mythical beliefs of human society, their roots in a none-too-remote savage past. Above these tower the organized institutions that have been established to perpetuate such relics of barbarism within the social fabric. In the face of this Rationalism asserts that supernaturalism can find no place in a civilized World Theory. For the practice of mankind has shown that there is no human activity that achieves its purpose by "Divine" intervention. Successful sciences like Physics, Chemistry, and Biology can call on no such aid. Engineers bend the material forces of Nature to the needs of Man, with no thought of spiritual help. Man organizes his life relying only on the powers of Man ; matter is conquered by matter. The history of human progress is the history of the emancipation of man from supernaturalism. Rationalism is therefore not an axiom, but a conclusion ; not an unestablished theory, but a fact of world practice. As such it must find its place in the finished statement that summates the rational experience of mankind. It is a factor in cultural understanding.

It is one of the contradictions of human practice that success in the pursuit of work that contributes to human advancement is frequently found by isolating oneself from the thoughts and activities of one's fellow men. Science in one sense advances by breaking away from the beaten track. True the individual worker must not stray too far afield, or he may find his movement disowning him. The more specialized the study nevertheless, and the closer the concentration, the greater the technical proficiency. The rare, the abnormal, and the limits of the normal—the singularities,

in fact—are the matters that focus his attention. He is a specialist or nothing.

But if Science advances by specialization to deeper knowledge, scientists by that same process lose in understanding. It has been said by mathematicians that Gauss's Law of Error has been found by experimental physicists to be correct, while physicists believe that the mathematicians have proved its truth. Between the two the law acquires a specious dual validity. Among a body of specialists it is no one's business to synthesize knowledge, for individual advancement comes by success in analysis. As with other activities, Science has yet to find its appropriate interpreters: the specialists are too concerned with the trees to appreciate the wood. For example, the lessons of science are rarely drawn for the benefit of Theology, nor do scientists appreciate the significance of their work in the social field. Each pursues his own study as if its content had no connection with that of workers in other regions, and affable clergymen anxious to derive a modern sanction for threadbare myths can assert, without fear of contradiction, that science has re-discovered mysticism and religion in the universe. One might have imagined that the severe discipline a scientist has to undergo in the collecting, checking, and gauging of evidence would have engrained itself so deeply in his mental habits as to leave him, at least, thoroughly sceptical of beliefs that show no evidence of a capacity for verification on anything approaching a scientific basis. A rigorous believer in rationally planned experimentation in his own domain, he lives nevertheless in a state of mental water-tightness, unable by the dead weight of social tradition to extend his specialized experience to other fields. He knows his science, but that is his special subject. Religion is to him a different matter altogether, and he professes ignorance of it. Presumably the clergyman knows best, for is he not its expert?

The scientist is not alone in this attitude of intellectual isolation. Legal experts also, for example, with their special standards of evidence, equally fail to subject the beliefs of religion to the severe cross-examination they would unfailingly apply in their profession to the most trivial happening in civil life; while a demand that Biblical events be accepted as precedents, or even as mere possibilities, would play havoc with most judgments in a Court of Law. What would be the attitude to liquor smugglers, for example, who maintained that the wine found in their possession had really been distilled water, transformed by some miraculous agency? Doubtless it would be regarded as a frivolous get-away even by a court officially Christian, as would an appeal to Miraculous Conception on an affiliation summons. The evidence for

the so-called truths of religious doctrine are subjected neither to scientific nor to legal criteria ; nor in practice do Science and the Law accept these truths. Individually, their devotees may profess a belief in the doctrines, but the assumptions of these truths play no essential part in their official other than ceremonial activities. As a developing movement, on the contrary, Science has very definitely been busy discarding all appeals to non-natural explanations for the past three centuries, and it has been only within the last few years, and in this country principally, that an attempt has been made to lead Science back along the path of intellectual reaction.

In precisely the same way, Big Business takes as little account of the Fatherhood of God as it does of the Brotherhood of Man. Within their limited range of vision business men are essentially realists, unconcerned in professional life with a body of belief that does not reflect itself in terms of Profit and Loss. While the individual draper or grocer, *in extremis*, may be beaten to his knees in prayer by the operation of the Multiple Shop, this nation of shopkeepers does not dream of turning to the Church to save it from an economic crisis or from national bankruptcy. It is an old dictum that Religion and Business must not be mixed. Unite them and they both collapse.

If we are to judge belief from action and behaviour, there is, of course, no one outside a lunatic asylum who believes in a world of Miraculous Conceptions, or of water transforming itself miraculously into wine. The only kind of activity that corresponds to such forms of belief is a purely verbal one—speech mechanism. As long as this is not to be translated into any other type of practical behaviour it is of little moment to anyone except the people who practise it. Where, however, a social institution like the Church exists for the propagation of lip service on a national scale, demonstrating by its actions that its professions are not to be related to realities, ignoring social oppression, blessing the human sacrifices that are thrown on the altar of war, supporting itself by the exaction of tithes from poverty-stricken land workers, then the lip service shows itself as a highly objectionable form of social barbarism. It would be a fascinating study to build up the beliefs that lie at the back of the Church Believing, as they would be deduced from a study of the Church Active.

The history of scientific theory and legal judgments is a story of the search for consistency, but whether it be based on logic, the behaviour of natural objects, or on social justice we need not pause to consider. In the same way the history of religious doctrines can be viewed as the continuous attempt to preserve the body of beliefs as a self-contained consistent

whole. Orthodox Christianity attempts to do this by a continuous alteration in the significance of the terms it employs, through its conferences and the writings of its commentators. Catholicism relies for this purpose on the dicta of its Popes. Both have to come to terms with those facts to which men must bow if they are to survive. It follows that those religious beliefs, too deeply embedded to be exorcised, that run counter to the widening experience of mankind must, by interpretation and re-interpretation, be relegated further and further into the background. They are beliefs without which the whole framework would fall to pieces, but beliefs that dare not be put to the test of practical and rational experience. Thus, while each section of the religious movement as a whole strives for self-consistency by readjustment internally, individual adherents live in one world and worship in another. Consistency of the movement can be attained, if at all, only at the expense of inconsistency on the part of its members. They live by reality while they profess unreality.

Religion is a figment of the overheated imagination. The temperature is maintained by insulating the religious movement from the demands made in the practice of life. The problem for the Rationalist Movement consists in breaking down this insulation in order that the lessons of life may be integrated, and illusion and fantasy thus eliminated from man's outlook. This is no easy task, for the first step in all progress has inevitably been a step towards the unknown—a move towards insulation. This is the stage at which knowledge is being acquired; but not until the insulation is again destroyed is that knowledge transformed into understanding. A persistent delusion of the religious movement, however, is that it can attain understanding without knowledge.

The issue for the Rationalist, therefore, is nothing less than the devising of an integrated system of education in the widest sense of that term. All educational systems are built very much on watertight, insulated lines. We learn arithmetic, for example, as if its rules and its system of symbols had stood for all time. Most of us never realize, and were never told, that the invention of a symbol for nought (0), and the separate meanings to be attached to the 1's, in say 111, represented fundamental advances in civilized expression, called forth by the social and commercial needs of their day. We do not see arithmetic as one of the tools mankind has evolved to do battle with Nature, but as a self-contained subject divorced from its socially historic roots. By isolating it we lose not merely something of importance to arithmetic, but our understanding of how society develops. Insulate arithmetic in this way, and presently you will be involved in the *mysteries*

of number. Every school, every university, has its list of *subjects*—Physics, Chemistry, Mathematics, History, Geography, Botany—each taught as a self-contained entity, complete and usually static. That these are isolated streaks of Social Culture does not strike us, for there is nothing to supply the synthesis, to reverse the analysis on which the educational system at present thrives. The raw student, emerging already highly specialized from school life, enters the next stage of his career to submit to still more intensive specialization in his subject. Returning to school life as a teacher, he carries the process one stage further. A few generations of this, without any compensating integration of knowledge, without its social and historic setting, and the course is set for easy runs along the tangents of speculation. Unreality becomes a possibility, and knowledge becomes mysterious only because it lacks the appropriate background for interpretation. Thus eminence in the possession of knowledge may exist side by side with ignorance in understanding, and when these eminent gentlemen branch out into the field of interpretation, as some of our specialist scientists are doing, their eminence is a direct measure of their capacity for confusion.

A Rationalist avoids absolutes. He sees the manner in which Man has evolved in body and in mind; he sees the way in which his continually expanding experience is reflected in his primitive explanations of natural phenomena, in his personification of Nature in the form of a multitude of gods. He sees society unfolding as Man bends these gods to his will, and as Nature shapes Man's outlook to its mould. He sees mind not as a fixed and perfected entity, not as a reasoning mechanism transcending space and time, but as an evolutionary concept. Thus he recognizes the tentative nature of all his generalizations and of his reasoning powers. The case for Rationalism cannot, therefore, consist of a series of propositions, valid for all time. Rationalism is an attitude, not merely a case. The Rationalist is as much a prejudiced member of society as any one else. His mind is also coloured by the historical period in which he lives. Where he differs from his religious brother is in the fact that he has acquired from society, and from a study of its modes of change, a fundamentally revolutionary outlook. It is revolutionary in the sense that it is a view that could be universally accepted only if society were very differently constituted from what it is at present.

For the universal acceptance of his views would imply a drastic alteration in the functions of numerous social institutions. It would imply the elimination of so-called religious institutions, and as a consequence all subsidiary bodies that

exist because of them. It would imply a complete reconstruction of our educational system, and not least a fundamental readjustment in cultural values. Each in their turn involves modifications more or less important in the economic structure of society. For institutions such as those that would be uprooted have themselves grown from the present mode of society. They have not been grafted on it, or merely superimposed on it.

In precisely the same way, if the Rationalist outlook is to become a living part of society it cannot become so merely by grafting it on. It would not survive in these circumstances. The ground has to be prepared, the soil has to be examined for any lack in nutritional quality, and if the pure seed of Rationalism is to germinate and flourish neighbouring weeds have at least to be trampled down and possibly torn up by the roots. Even in these circumstances the Rationalist plant cannot survive alone. Other plants of a like nature have to be coaxed and encouraged into life. Rationalism has, in fact, to develop its appropriate culture, its own local environment, and its own local climate.

PHILOSOPHY AND RECENT PHYSICS

By PROFESSOR J. W. A. HICKSON

ON its first formulation the Theory of Relativity appeared to bring confusion into and completely overthrow the "classical" physics of Galileo and Newton ; but gradually it has come to be regarded as the extreme development and crowning of the older physics, and not as in essential conflict with them. It has touched in a fundamental way on the problems of space, time, causality, and the cosmological problem, which have been among the most important questions in modern theoretical philosophy. It has united the concepts of space and time, and, in conjunction with an electronic theory of matter, those of mass and energy, whereby a long-standing dualism between the ponderables and the imponderables has been overcome. Withal it has upheld the view that the structure of the physical world is such that it constitutes a self-determined system, in which the behaviour of every element and every process is regulated according to the principle of causality, the principle of the uni-determinism of changes. Given the constellations and the impulses of the elements of a closed system at one instant, or the constellations alone at two different instants, then it is possible by the aid of physical laws to calculate the state of the system at any other instant. A strict formulation of the causal principle has guided Einstein throughout his labours, a logical mainspring of his method being that in the formulation of physical laws only those objects can be regarded as causally connected which are capable of being observed. This is in accord with Newton's demand for *veræ causæ*, and has led to the rejection of both forces at a distance and the sometimes very convenient ether.

The apparent rounding-off of the World-view by the Theory of Relativity was upset by the Quantum Theory, which upholds discreteness as against continuity of existence and action, and which introduced an element in a fundamental equation which the Theory of Relativity cannot explain.* Frequency and energy have different dimensions : the one is

* This equation is $E=h\nu$, in which E stands for energy, ν for frequency, and h represents Planck's constant.

a local magnitude, the other is an additive quantity. The Classical Physics postulate particles; the Quantum Theory postulates waves. If the quantum of action were indefinitely small, the second theory might be merged in the first. This is not so; and in the development of the Quantum Theory it has been found that to measure simultaneously both the position and the momentum of the unit of action is not possible. In wave mechanics, if the momentum be defined with accuracy, then the determination of the position remains indefinite. This state of things led Heisenberg to the formulation of an Uncertainty Principle, which has raised a fundamental question for the Logic of Science—whether the causal view of the world, hitherto unquestioned in mechanics, can any longer be upheld. After a penetrating examination of the facts, the distinguished author of the Quantum Theory maintains that it can; but the meaning of determination in Relativity Physics and in Quantum Physics is slightly different, as he has pointed out in his admirably clear and critical book, *The Universe in the Light of Modern Physics*. He holds, with Kant, that the principle of causality is one of the a priori—that is, logical—principles of science, and that experimental knowledge is synonymous with causal knowledge.

This standpoint has recently been subjected to criticism by distinguished physicists, among whom Exner was probably the first to maintain that physical laws may be only of a statistical character—i.e., that they hold good only of relations of multitudes, depending on the fact that average results can be predicted with confidence, although the behaviour of each individual may be quite uncertain. The macrophysical phenomena which our sense organs show us are collective phenomena; they are the average result of a large number of microphysical individual particles and processes. The laws which the former follow are only expressions of the average effects, the regularity of which *might* be quite compatible with a certain lawlessness of the latter. The macrophysical results may in general approximate very nearly to certainty. If physical laws are conceived as statistical regularities, it need not be supposed that the microphysical phenomena are causally determined. It is sufficient to make a weaker assumption—namely, the applicability of the calculation of chances to events—in order to guarantee a statistical determination.

The Quantum Theory of energy has been responsible for the attack on the principle of causality, which certain philosophers and theologians, who have not understood the reason of it, who know little of exact science and still less practise scientific method, have seized upon with avidity, thinking it

possible to draw support from it for one of their pet doctrines: the freedom or non-determination of human volitions, popularly termed the freedom of the will, under what we consider the mistaken assumption that a free-will universe alone provides a theoretical basis for ethics.

If a quantum is indivisible, this places a limit to the exactness with which the position and the momentum of a microphysical particle can be determined. Heisenberg has shown that there exists an "uncertainty relation" in the determination of the position and momentum of such a particle which is of a value of the same order as Planck's constant h , which is extremely minute. We can determine the position or the momentum with increasing exactness, but the more the exactness of the determination of the one increases, the more the exactness of the determination of the other decreases. So Heisenberg, Bohr, and others, declare that we cannot make the determinations necessary for an application of the principle of causality, and therefore this principle becomes shorn not only of its importance, but of any meaning. It seems to be a strange use of language to designate this situation, as does Sir Arthur Eddington, the Principle of Indeterminacy, in which he has re-discovered God; since, according to him, the facts exclude the formulation of any law or principle.

Now, even admitting that it may never be possible to divide a quantum, Planck has pointed out that this conclusion is not a necessary consequence, because it is not necessary that both the positions and the momentums of the elements shall be determined in order that the behaviour of the system can be inferred. It will do equally well if the configurations of the elements at two different instants can be determined, and Heisenberg's "uncertainty relation" appears to present no hindrance to this. In practice it may not be possible to determine in one instant the configurations of the molecules in a cubic centimetre of a gas, but in principle it is still possible; and so we can continue to believe in the validity of causality in the microphysical as well as in the macrophysical world, even if it cannot be experimentally shown. Our inability to demonstrate the applicability of the principle in such cases no more invalidates it as an important methodological ideal to be realized and approximated to, as far as possible, than does the non-existence of the ideal objects with which certain physical theories deal render these theories senseless and useless.

Limits of observation and experimentation do not constitute limits of thought. The principle of causation expresses the minimum theoretical requirement for the possibility of science. Absence of causation is not intelligible. If the

course of events is not definitely determined, it is not possible to understand that anything occurs ; for the origin of something out of nothing is inconceivable. It is theoretically impossible to prove that a given set of phenomena is not subject to laws.

Inability to predict accurately does not invalidate belief in causal relations. For example, statistics show that about three-tenths of the weather forecasts are erroneous, from which no one will infer that the weather is not determined. In certain instances of cerebral change the conditions of experimentation may make it impossible to show the exact application of the causal principle. From this a scientist will not infer that the course of nature is indeterminate, but that it is not in all instances measurable.

It has been acutely argued in *Nature* (December, 1930) by J. E. Turner that "the use to which the Principle of Indeterminacy (so-called) has been put is largely due to an ambiguity in the word 'determined.'" A quantity is determined when it is measured : an event is determined when it is caused. If the velocity and position of a particle remain undetermined, this means they cannot be accurately measured ; and this is because the measurement is a physical process which has a physical effect on what is measured. In this there is nothing to show that any physical event is uncaused. The argument, as Mr. Turner has pointed out, that since a change cannot be determined in the sense of being measured it is not determined in the quite different sense of being caused, involves a fallacy of ambiguity. What the "Principle of Indeterminacy" shows is not that the course of Nature is not determined, but that the apparatus of physics is not adequate to its needs.

Sir Arthur Eddington has suggested that atomic indeterminateness may correspond with what in human behaviour is known as the freedom of willing.* The suggested analogy, which some metaphysical and religious psychologists have attempted to turn to the benefit of their own requirements, in no way strengthens the former belief, since the latter has never been accepted generally by leading psychologists. For the most part the mathematical and physical free-willists simply ignore the teachings of biology and psychology, and strike one as slightly amateurish in philosophical criticism. The view that human actions are caused like other events is the logical foundation of scientific as opposed to what may be termed literary psychology (Bergson's), and is the postulate of all rational education and the training of human will.

* C. G. Darwin, in *New Conceptions of Matter* (1931 ; Chap. IV), maintains that the Uncertainty Principle has no bearing on this question.

Whatever may be thought of the most recent theories of the atom, they have no bearing, as Bertrand Russell has shown, on human behaviour, which, involving large and visible motions, comes well within the scope of the old laws, or at least of statistical laws, the assumption underlying which, as also the calculation of probabilities, is causality. In order to write a drama or scientific treatise an appreciable mass of ink has to be moved. The electrons composing this fluid may be moving indiscriminately, so far as we can determine, around their little room; but the room, as a whole, is moving in accordance with the laws of physics; and this is the important aspect both for the writer and the publisher.

It seems that physics has reached a stage in which both causal and statistical methods—between which there is no necessary conflict—work equally well. The fact that one and the same phenomenon may be sometimes considered from one point of view as an individual, and from another as a multitude or group, shows that there is no contradiction between the simultaneous use of both causal and statistical methods at different levels of experience. If this be the case, it would make it difficult to draw any definite inferences regarding the structure of the reality with which physics deals.

What has recent physics to say concerning the nature of the microphysical phenomena? The answer is to a large extent negative.

The elements of the physical world appear to have both wave properties and particle properties. Eddington has used the term "wavicle" to indicate these elements. This is rather a concentrated expression of the difficulty of uniting the properties than a solution of the problem. A working model or mental picture of the wavicle is lacking. One group of theories emphasizes the continuous wave view-point: another group emphasizes the discontinuous particle view-point. It has been maintained that these theories are mathematically equivalent, and can with certain limitations be transformed into one another. Thus Niels Bohr terms the wave concept and the particle concept complementary aspects of nature; each represents a different way of conceiving a reality which has both wave aspect and particle aspect.* But if this be the case then they should be mutually consistent, whereas the application of the one concept seems to exclude the simultaneous application of the other. They cannot be brought, as the theory of knowledge would demand, under a more general concept. Whether this will be possible later and a systematic unity be realized remains an open question. In the meantime physics has become

* Cf. C. G. Darwin, *ibid.*, Chap. IV.

rather a symbolical science, the main philosophical outcome of which is that none of its concepts regarding the nature of the physical world works universally. This has led to the paradox supported by Bergson and the mathematical physicists, that the further science advances the less it knows of reality.

Because it is impossible to say what sort of entities the mathematical symbols represent, does it follow that the microphysical phenomena have no objective reality? Some physicists have answered this question affirmatively. They urge that our finest means of investigation of the minute processes are so gross in comparison with their fineness that they unavoidably cause a disturbance in them. It is consequently impossible to determine the processes as they are going on objectively—that is, as they presumably would have taken place if they had not been investigated. In regard to these minute phenomena we are confronted with the same difficulty that Comte urged over a hundred years ago against Psychology—a difficulty which this science has overcome: that introspective observation of mental phenomena often disturbs them, or may bring about their cessation. If the subjective factors in observation cannot be separated from the objective ones, then the very existence of an independent objective world becomes problematic. Neither the reasoning nor the conclusion appears to be convincing.

Various experiments go to show that the means of investigation interfere with the events to be observed in such a way that, as has already been recognized, it is not possible to determine simultaneously with exactness the position and the momentum of the microphysical particles. This interdependence is, however, not one between an object on the one hand and observing subject on the other, but an interdependence between two objects. What disturbs the path of an electron is *not our seeing it*, but the collision between it and a light quantum. And, even though this collision is a necessary condition for our seeing the electron, there is no more reason to hold that it is influenced by our seeing it than there is to suppose that our seeing the sun is the cause of its "rising." There is every reason to believe that both would have occurred in the same manner if we were blind or remained asleep. Therefore we have no less reason for assuming an objectively existing world than we had previously, although physics may be unable to tell us what this reality looks like.

Einsteinian Relativity also leaves the question between the Realists and Idealists just where it was. It does not involve Ideality, as some philosophers, who appear to be unable to see the difference between a new scientific theory

and the old doctrine of the relativity of perception knowledge, have maintained. The "warping of space" which it involves is not a subjective or psychological phenomenon. It depends on the amount of matter in a gravitational field. Space, time, and motion are indeed relative, not to a mind, but to certain objective data. They are functions of relations which depend on things, not on our modes of perceiving things; they are functions of relations which have objective grounds. Space-time is modified by the presence of mass. This is far removed from the doctrine of the ideality of space and time. It is true that Einsteinian Physics tends to reduce realities to events. Energy is now a wider concept than matter. But it seems quite misleading and useless to write energy with a capital E, as does Sir Oliver Lodge, and suggest that it is probably non-material. Energy is a mathematico-physical concept: it represents the substance of the physical world; which, since it has taken on the qualities of weight and resistance, differs in no fundamental way from matter. According to the Quantum Theory, discontinuous energy conditions control the structure of matter.

Apart from the concepts of space and time and the universe, recent advances in physics have not involved fundamentally new philosophical views, but they have led to an examination of older beliefs in order to decide whether prejudice based on long usage has played any part in maintaining them. Very recently Einstein has revised his doctrine of a limited universe, and now appears to be revising his former view of space. A speculative factor is involved, in any event, in the merging of time and space, the difference between which is admitted by Einstein when the "universe is viewed on a grand scale." While the Relativity Theory cannot explain the photo-electric effect, the Quantum Theory has failed to explain the phenomena of interference. The author of the latter does not consider it in all respects superior to the former theory. The fundamental concepts of physics are indeed in a state of flux, and until the present crisis in this science is decided it would seem quite unjustifiable to discard any important principle of knowledge. Planck has sounded a very distinct note against the supposition that recent developments of science are incompatible with a thoroughgoing determinism. He, Einstein, and other physicists have repudiated the set of interpretations which Sir Arthur Eddington and his followers have attempted to base on our supposed ignorance of the real world.

HUMILITY AND FANCY DRESS

By LOUIS GOLDING

(*Author of "Magnolia Street"*)

I MET a young man the other day who until eighteen months ago had lived all his twenty years in one of the most isolated small towns in the world. Eighteen months ago he had felt the pull of far places so strongly that he had thrown up his job and set out to work his way to London. I cannot possibly recount here all that has happened to that young man since he left his town, which was Perth, in Western Australia, on his humble Odyssey; but I must mention that in the course of it he had lived with natives in the South Sea Islands, and hoboos in the Canadian Rockies, and film stars in Hollywood, and gamblers in a ship anchored outside the three-mile limit on the Californian coast. And as I too have felt the call of far places too eloquent to be resisted, I was curious to learn what the young man had learnt since he had left his little town.

"I think the most important thing I have learnt," he said, "is to judge people by their standards as far as possible, and not by my own."

"In other words?"

"I have learnt that people, even gangsters, even tramps, are fundamentally decent. I try to keep to the standards I set for myself. But I do not try to impose them upon other people."

"I see," I said. "You have learnt to be tolerant since you left this isolated city of yours in the Australian bush!"

He laughed. "I have learnt humility," he said.

Which brings me to my point, that intolerance is the detestable daughter of vanity. I think that any traveller, whatever his country or initial interests might be, becomes an authority on the pleasant operations of vanity. I believe that any traveller learns the value of humility.

I have pursued the study of this question from an early age, and many lands have been my university. I once followed the path of an Odyssey less humble and a little better known than that undertaken by my young Australian friend. A protracted and devious journey through the enormous southern and south-western states of America added richly to my data on the subject. And, having just returned

from another journey, from the Dnieper, in Russia, and from Kief, and Warsaw, and Berlin, I am still aching from many blows administered by this same cudgel.

But despite my bruises I have no hesitation in prodding you from those armchairs of yours and begging you to come on another journey with me. You do not wish to be bruised too? But it is worth it! It is worth it, that is, if you believe with me that a man can be truly free only if he is aware of the world and fights for his freedom till his eyes close for the last time.

But wait. Before we go on our journey we will need passports. I warn you that it will be useless for you to protest that the passport system is a farce. It will be wasting your time to argue that the passport is international suspicion expressed not in terms of battleships and tanks, but in terms of officialdom. The passport was introduced during the War, when suspicion was fanned by fear and hatred. It has persisted for fourteen years to feed the conceit of officialdom. The passport was a chance to interfere with the liberty of the travelling public, and bureaucracy made the most of it.

We will fill up our forms; we are granted passports. Where shall we go first? To America, the land of Prohibition? Yes, I admit it. Prohibition is tottering on its machine-gun-riddled throne. To Germany, to hear the Nazi heels drum and thud like a shipyard of rivetters? To see Pilsudski twirl his waxed moustaches? No; let us to America first and seek the great Narcissists of modern history, who look upon their faces each morning in their shaving-mirrors and fall a-doting on them.

A slightly-belated pilgrimage, you suggest, a pilgrimage to the Ku Klux Klan? True, the post-War tale of the Klan is but a recrudescence of a nineteenth-century mischief, and is on the wane already, but their record is likely to provide for a century or two the *locus classicus* of dangerous, pathetic, and ludicrous vanity. And the spirit survives (the negroes will tell you that), even though the regalia, the robes of mystery and the fiery crosses, the passwords and the meeting-places, are no more.

We find, I think, that the leaders of the Klan were astute business men. But in the rank and file it was not wholly, nor even mainly, a matter of business. There were tooth-paste-salesmen in Alabama and oil-well drillers in Oklahoma whose intolerance was genuine enough. They loved themselves, they did (to adapt the words of the song). They reached their own hands out behind their backs and patted themselves between the shoulder-blades. "Just look at us," they murmured to themselves. "America's leading regular guys!" And so violently did they approve of themselves,

these toothpaste-salesmen and oil-well drillers, that a sudden fear fell upon them. They, the paragons of nature, were threatened terribly and mysteriously by those others, those who were not cast in their racial or doctrinal or epidermic mould. The negro's essential crime was not the raping of the regular guys' wives and daughters. It was the crime of wearing a black skin when regular guys wear a white one, thus contumaciously implying that a black skin is the equal of a white skin any day of the week. And these Catholics, not less than those Jews, dared to be different. Something had to be done about it.

On our present journey we do not see those slitted hoods and fiery crosses. But, as I said, we see the spirit still in operation. And we see also that it is operative not merely in the Protestant bosom, which is its southern home, but in the Catholic, the Judaic, the negroid, no less. For in its general aspects it is a majority phenomenon with the reassurance of numbers for its arrogance. And it is not confined to the Land of the Free.

Let us leave America, then, for the highways and byways of the Fascists' Italy. But how seriously they take themselves! How different it was in the old days, when you fought for your luggage with those glorious porters with operatic moustaches and rolling eyeballs—any moment you felt that the biggest and fattest of them would throw out his chest and let off a terrific aria from *Donnizetti*. But now We step on to the quay. A tiny black-shirted gentleman issues curt orders. The porters form fours. Their one-time aspiring moustaches droop like seaweed. One by one they slouch up to us like sausages turned out by a dispirited sausage-machine. They look just like a little gang of chained political prisoners in Russia, shuffling off to Siberia. But the regular guy in the black shirt struts behind them, twiddling his stick.

What! You say the trains now arrive in time in Italy? You would sacrifice all the gaiety and irresponsibility of the warm South to the harsh demon of unpunctuality? Let them be punctual in Minneapolis and Philadelphia. There's really not much else to do there. But Giotto didn't paint there. Petrarch didn't sing there. It will be a long time before they do in Italy again. They wouldn't be allowed to—unless they turned Fascist, and wore black shirts.

And Germany. Like the Ku Klux Klan and the Fascisti, the Hitlerites apply a salve to their vanity by the use of fancy dress. They don't do it quite so well as the Klan in its glory. The Fascisti, too, in their full panoply of black shirt, fez-cap, and jar of castor-oil, were rather more satisfactory. But the followers of Hitler, the house-painter, make up for it

in noise. It is more effective than their brown shirts and the swastikas on their arm-bands.

We must be careful if we go bathing on a hot day in the Wannsee, that great lake near Berlin where the artisans go of an evening to get the air of the tenement out of their lungs. That is, if we look French or Jewish. That would be quite enough to get our heads broken by a Hitlerist bludgeon. It is bad enough in Berlin, but it is worse still in the State of Thüringen, where the Hitlerists have got the whole provincial government in their power. Heaven help us if we are so silly as to ask in a restaurant there for a French "tournedos"! If we did that it would be quite possible that a lot of ferocious gentlemen with swastikas on their arm-bands, on their watch-chains, in their button-holes, would twirl their moustaches at us and shout "Heil, Hitler!" at us until we fled away as far as Llandudno Pier or the Wigan High Street, where one can order even a Hungarian "goulasch" without fear of a pogrom.

And here in Thüringen is the countryside where the luminous Goethe wandered and meditated! "Goethe in Weimar sleeps," recorded Matthew Arnold. How his poor ghost must whimper with dismay when he sees great truck-loads of Hitlerist children, waving swastika banners, singing songs which Torquemada would have rejected as altogether too ungentle!

And when on Midsummer's Eve he goes wandering under the hills and he sees the Hitlerist young men, regular guys all of them, use a whole mountain-side as their hoarding, whereon they trace out in bonfires a cosmic swastika, the symbol of their harsh race-hatred, he must feel that, since his day, time has not marched forward a century and a half, but slipped down a steep slope again into the dark ages.

But before we leave the ghost of Goethe, before we leave the Thüringen Wald, may I voice a protest against the minor inconveniences to which travellers in Germany are subjected? Why are we forced, after a few weeks of sojourn in this pleasant land, to go and tell the whole of our private histories to a large assemblage of police officers? And why must we pay on every glass or cup of liquid, apart from beer or milk, a most exasperating little tax of a pfennig, a tenth of a penny, so that our pockets are always laden with a whole armoury of metal? I know a harassed country must do all it knows to make both ends meet. But isn't that sort of infliction just the straw on the camel's back that leads to red ruin and the breaking-up of laws?

We are in Paris. We have reached Paris all right, despite the harassing, pettifogging attentions of minor officials. A hundred attendants have levied their blackmail.

"Service!" they cry. But we will not discuss the tyranny of the tip. We will not struggle with that grim despot, the *conciérge*. For it is vanity and not greed with which we are concerned. And the queerest vanity in France is found in that grim convention which even now, in this year of grace, prevents a typical middle-class Frenchman from allowing his daughter to walk as far as the post-office to buy a stamp without a cohort of chaperons.

Yes, it is worse a little further south, in Burgos or Madrid, where the sad maiden is kept almost literally under lock and key, even now, in this dizzy epoch of revolution. Even now, if she is forced for some reason to go into the street unaccompanied, the Spanish male is still so unused to the sight of her that it will be all he can do to prevent himself from touching her. She might be a griffin or a unicorn or some other mythical animal.

And now—Russia. I won't complain about the personal inconveniences one suffers in Russia. It would take too long. And I would have to balance it with a list of spiritual exaltations. But I am on the subject of vanity, and heaven knows there is a Communist vanity too.

Here the majority phenomenon is operating again. We are despised because we are different. We are bourgeois, we are fools. The factory-workers are the new aristocracy, and they are well aware of it. Intellectuals, artists, poets, musicians—what place is there for you, should you wish to live in Russia! Little, I warrant you, unless you are prepared to weld your art to Communism. Man and all his arts are dedicated to the State.

We turn out of the Red Square and walk down a narrow street. A man is lying in the doorway, an old man, and it is plain that he is dying. People pass him by with a casual glance. Will no one stop to help him? But how can they? The infirmaries are full. Besides, he is old. He is of no use to the State. Let him die..... And they are not callous, my friends. They have seen so many dying—in doorways and in rows before stone walls.

He lay dying. But even in the moment of my desolate realization of the glaze gathering over his eyes a youth passed with a brighter light than I have seen burn in any youth's eyes in the New World or the Old. He sang. I was, in that moment, not certain that the tale of our kind was so vain as it has seemed to me all these years since I too was a youth, and I too sang, but with less glory in my singing and less light in my eyes.

ASPECTS OF MORAL DEVELOPMENT

By PROFESSOR MORRIS GINSBERG

THE moral ideas and practices of mankind may be examined from two points of view. In the first place we may seek to determine the various forms in which they appear among the different races of man or at different periods of time with a view to bringing out their essential characteristics, the functions they fulfil in the economy of life, their historical affinities. We may combine with this inquiry a psychological analysis of the ways in which moral beliefs and modes of behaviour come to be accepted by the individual, and the manner in which they serve to fulfil or thwart the fundamental needs of the mind. Questions of this kind belong to scientific sociology and psychology. But, in the second place, moral beliefs may be examined from the point of view of their validity or truth. This is the problem of ethics proper, whose object is to disentangle the assumptions implied in our moral judgments, to discover the principle or principles which would make them self-consistent and in harmony with standards acceptable to reason. Ethics in this sense cannot be reduced to the sociology of morals, any more than logic can be identified with the history or psychology of thought.

Here I want to discuss certain aspects of moral evolution from a purely sociological point of view. I wish to bring out the general nature of moral development and the principal trends which may be discerned in it by comparative study. A broad survey suggests that these may be reduced to three. Firstly, there has occurred a process of differentiation leading to the gradual emergence of the distinctively moral from other forms of the regulation of conduct, such as the religious, the legal, and the conventional. Secondly, there has been increasing rationalization, moral judgments have gained in detachment, impartiality, and generality, and rational standards have increasingly been insisted upon and taken the place of magical fears, blind aversions, and approvals. Thirdly, there has been an extension of the range of persons or groups to whom moral judgments are held to apply, and there are the beginnings of true moral universalism.

All known societies have codes of conduct—that is to say, sets of rules prescribing or forbidding defined classes of acts,

rules which are upheld by the tendency of their breach or violation to evoke social disapproval. We find further that the codes cover the principal relations of life ; and they do so, apart from limitations of range, in a manner strikingly similar in all known cultures. Every known code prohibits homicide and theft, and inculcates charity, generosity, mutual aid, and respect for truth.* Everywhere we find the elementary needs of mutual loyalty and co-operation provided for in the ordinary working rules of social life. Thus, if there is an evolution of morals it is not an evolution out of a non-moral state, but one within the field of morals, and one which consists in the clarifying of moral ideals, the widening of the sympathies, and the consequent extension of the range of persons to whom rules and ideals apply, the fuller appreciation of human purpose in the ever-increasing and complex activities of social life.

To understand the nature of this development we must consider briefly the psychological forces whereby rules of behaviour are maintained. To the individual they come largely from without. The average person has to accept the rules which he finds in his society, and which are imposed upon him by his parents, teachers, and companions. They thus carry with them a kind of obligation or constraint. This constraint has commonly been interpreted in terms of habit. The difficulty of acting in a manner contrary to custom is analogous, so it is said, to the difficulty we experience when we try to act in opposition to firmly implanted or habitual modes of behaviour. It requires an effort of will to resist an automatic tendency, and we usually experience discomfort in seeing others go through movements contrary to our own habits. In this explanation there is some truth, but it misses essential points. It ignores the process of habit formation, in this case the process of accepting the rules which is by no means automatic, and it leaves out of account the problem of the way the rules themselves come to be formed and the needs which they are destined to meet. The Freudian account of conscience cuts deeper. According to this view conscience is the result of a conflict between love and aggression. At first we regard that as evil which is disapproved of by those whom we need and on whom we are dependent. We control our natural desires because we fear to lose their love. This frustration of impulse, however, calls forth the aggressive tendencies within us ; but, as these cannot be given due expression in relation to those whom we love, they are turned inwards. Conscience is thus introverted aggression, beginning with the fear of others and ending with the fear of

* Cf. Westermarck, *Origin and Development of Moral Ideas*, II, p. 743, and *Ethical Relativity*, p. 197.

our higher self or super-ego. This account rightly stresses, though in somewhat metaphorical language, the elements of fear and authority in conscience ; but it does not, as it seems to me, bring out sufficiently the more general tendencies in the human mind making for order and unity. The roots of conscience are to be found not in any one impulse or sentiment, but in the conational unity of the self, the need for introducing order into the chaos of warring impulses and turbulent desires. Conscience is the tension between the ordered personality and the impulse of the moment, and it is frequently a tension which is not satisfied by mere acceptance of existing rules, but leads to criticism, defiance, and reconstruction. It remains, however, that in the growth of unity within the individual the rules that come to him from without play the most important rôle. It follows that the order established within him is often not rich and free, but cramped and thwarted. The order within depends upon the order without for all but the hypothetical "sage" of the philosophers. It thus becomes of the greatest importance to inquire into the basis of the external order—that is, into the way in which social rules come to be formed, and in particular into the part played by reason in their formation.

In general, the institutions of society, including moral rules and customs, are the results of an adjustment of human relations to the needs of life. If they fail to meet the pressure of needs, they crumble in the long run by a process of attrition and gradual modification, or, it may be, by deliberate or reflective reform. This view is often maintained, especially by biologically-minded sociologists, yet it requires careful qualification. First, the needs themselves are inchoate and conflicting, and there is no social mind which can grasp them in their entirety or find the lines of their harmonious fulfilment. In the main, and even in advanced communities, social change follows its unreflective course and responds only in a rough and crude way to the needs of the community. Second, when we speak of the needs of the community it is important to ask, Which community? The process of civilization brings with it enormous differentiation and social stratification, and the needs of "the community" that make themselves felt in social change are often those of a class or section. Hence we do, in fact, find already in the ancient civilizations a double and conflicting morality—the morality that preaches submission to authority and perhaps a certain moderation in dealing with inferiors, and the morality of universal benevolence and the restraint of self. This bifurcation of morality persists through the history of civilization, and there is on the one hand a body of traditional rule imposed by authority and the force of social prestige, and on

the other the morality of the prophets and revolutionaries preached as an ideal remote from the actualities of common behaviour. Of this second type of morality it is absurd to maintain that it expresses what is customary and automatic, or that it comes to the individual with social constraint. It is, on the contrary, met with repudiation, and gains influence over the traditional morality only slowly and painfully. The development of morality is thus not the result of an automatic adjustment to the needs of social life, but of a profound struggle between the forces of tradition and the growing insight into the needs and purposes of men; of an increasing conflict between the rational and irrational elements in the minds of multitudes—a conflict whose issue is uncertain, and which is ever deepened and widened by the increase in scale and intensity of the problems with which they are confronted.*

The development of morality does not proceed along a single line. It is affected by religious beliefs and the general growth of knowledge, by economic and political factors; and it shares in the deviations and retrogressions frequent and familiar in the entire evolution of the social order. Yet certain main trends which were referred to in the beginning of this paper can be discerned, and I propose now briefly to discuss them. To begin with, there takes place a process whereby the distinctively moral is gradually differentiated from other forms of social regulation. In the simpler societies the legal and the moral have not yet emerged clearly from the common matrix of custom in which they have their origin. In more advanced communities certain rules of life come to be formally declared and enforced by a constituted authority, while others are left to the inward sanction of personal morality, and others again are not regarded as affecting the fundamental and common needs of life and constitute what are called conventions. The relations between these three—the conventional, the legal, and the moral—are reflected in the far-reaching variations of social life, and have to be studied historically in each case. Yet upon the whole we can say that the broader the rule of custom, the poorer is the personal morality and the cruder and more external the law; and, on the other hand, the more intimate and pervasive the law, the stronger grows the opposition of individuals to

* In a recent work of Professor Bergson (*Les deux sources de la morale et de la religion*) the bifurcation I have spoken of appears in a somewhat exaggerated form. He speaks of an infra-intellectual or quasi-instinctive morality and a supra-intellectual morality. It seems to me that actual morals possess just the characteristics we should expect if they were the results of efforts of men to mutual adjustment, hindered by vague fears and repulsions and affected by crude magical and religious beliefs, but occasionally helped forward by insight into the fundamental needs of the mind.

it, and the problem comes to be clearly formulated of defining their proper sphere.*

The relations between religion and morality are extremely complicated, and I must content myself here with a very general statement. In some of the lower cultures the spirits are often non-moral, but even there the religious and the moral are interwoven, or rather the magico-religious and the moral are not clearly differentiated. The higher religions are essentially ethical. The moralization of the gods proceeds to the point where the divine is regarded as an incarnation of the moral law. In still higher phases moral rules tend to become autonomous, and, so far from resting upon divine authority, are often regarded as the only evidence for the reality of the divine. The stress on values which we find in modern religious thought is partly due to the restriction of the sphere of the supernatural, effected by the extension of the sphere of the natural effected by modern science. The natural has been taken out of the field of the numinous, and the notion of God as creator and sustainer of nature has lost ground. On the other hand, the discrepancies between the moral order and the natural order, the need for a power greater than ourselves which would resolve our conflicts and satisfy our aspirations, the need of compensating us for the failures of culture and the moral codes, remain and constitute an abiding motive for religious beliefs. Nevertheless the primacy and independence of ethics in relation to religion is increasingly insisted on in modern thought, and to a growing extent also in practice.

With the emergence of the distinctively moral attitude is connected the growing rationalization of the moral judgment. In primitive morality magical elements predominate. The evils which follow on certain acts are referred mysteriously to the *mana* of the acts. Thus danger lurks in forbidden foods; there is something uncanny in the untrue word; the curse of the stranger refused hospitality has hidden power, and all kinds of fears gather round the relations between the sexes. Hence the primitive moral judgment looks to the act rather than the intention, though some savage races do discriminate between the intentional and the unintentional act.† As the moral judgment becomes more reflective, it becomes more detached, impartial, directed more upon the character of the agent rather than the actual consequences of his act, less dominated by emotional bias. Customary codes, moreover, are subjected to critical scrutiny, and the attempt is made to find a basis for the rules of behaviour by reference to ends and purposes in which reason can find intrinsic value. For the developed moral judgment the morally good is that

* Cf. Windelband, *An Introduction to Philosophy*, p. 253 seq.

† Cf. Westermarck, *Moral Ideas*, I, 220.

which is inspired by the love of the intrinsically valuable, and the relation between that which has value in itself and that which ought to be pursued is apprehended immediately and requires no external sanction. To what extent this attitude of mind is general in any community it is impossible to say, but the tendency towards rationalization of morals is something that can, as it seems to me, be definitely traced in the evolution of morals, though of course it is subject to retrogressions and divagations.

The best established trend of moral development is the extension of the range of persons to whom moral judgments are held to apply. As T. H. Green pointed out, it is not so much the sense of duty to a neighbour that has varied as the practical answer to the question, Who is my neighbour? Primitive morality is group morality, and the group is small. Gradually the range extends, and there is a widening of the sympathies towards others who do not belong to the group, while the group itself has enormously expanded. It is true that group morality persists, and the interest in our fellow citizens is in part maintained by the fear and the hatred of the stranger. Bergson suggests that moral universalism implies a kind of morality differing in nature from the ordinary morality of the herd, since it contains no element of opposition or hatred. But I doubt whether he is justified in this view. The spread of universalism seems to depend upon the widening of the ordinary sympathies, and in particular upon an extension of the power of imaginative insight enabling us to realize the essential identity of human interests. The actual limitations of moral universalism are due to the persistence of great inequalities in the level of life which makes sympathetic identification difficult, to the presence of counteracting agencies trading on ignorance and prejudice, and above all to the comparative failure of reason to inspire that passion without which nothing great or noble can be achieved. But whether moral universalism is due to an extension of sympathy and the growth of reflection, or whether it implies moral insight of a different order, there can be no doubt that, taking the history of civilization as a whole, substantial progress has been made towards it, though, in comparison with what remains to be done, human achievements in this direction are small. It will be seen that the three tendencies of moral development which I have here briefly traced are not independent. The differentiation of morals involves its increasing rationalization, and this in turn carries with it logically, though unfortunately not necessarily in practice, the applicability of moral rules in a spirit of equality and impartiality to all human beings, of whatever race, class, or creed.

AN ACADEMIC OVERSIGHT

By W. NICOL REID

WE have in our midst a number of institutions of hoary antiquity, of imposing solidity, and of acknowledged usefulness, devoted to the task of informing, and presumably also of forming, the minds of our youth—of preparing them for the practice of their chosen avocations, and, in some cases at least, of equipping them for the pursuit of truth. Much of the work of those institutions is carried on with a wise adaptation of means to ends which reflects great credit alike on those responsible for the general scheme and on those whose duty it is to carry it out in detail in their respective departments. The system, however, is not without its flaws; the ends it makes for are not in all cases true ends; nor is the academic mind without the defects of its qualities.

Professor William James once breathed into the sympathetic ear of Dr. F. C. S. Schiller the extremely upsetting and heretical doctrine that "the natural enemy of any subject is the professor thereof." Dr. Schiller himself enlarges on the theme with evident gusto, going the length of declaring that professors rob the subjects which they are paid to expound "of all human or practical interest," and that they love to wrap themselves in "mysteries of technical jargon" and to become "as nearly as possible unintelligible." Those are sweeping generalizations, which the judicious reader will of course not take too literally.

But when definite charges are brought against the official expounders of a specified subject, and when those charges are concurred in by serious thinkers belonging to widely different schools of thought, those whose credit as instructors of youth is at stake might well be expected to bestir themselves in their own defence. This has long been the position with regard to the teaching of the subject of logic in our universities. Despite a series of criticisms extending over a period of some three hundred years, the logic of the classroom deservedly remains to-day, as Berkeley declared it to be in his time, "a much despised and decried art." In recent years critics like Mr. H. S. Sheldon, Dr. Charles Mercier, Dr. F. C. S. Schiller, Mr. Alfred Sidgwick, and Mr. J. M. Robertson have expressed in definite terms their sense of the

childish futility of the study of logic as prosecuted in our universities to-day.

It was a conviction of the futility of such teaching as an introduction to the art of right thinking that led Mr. Robertson to write his *Letters on Reasoning*—a work worth a cartload of the “prescribed” text-books. Dr. Schiller’s criticisms of the traditional teaching culminate in the declaration that Logic has just been “examinable nonsense” for the last two thousand years. Dr. Mercier felt even more warmly on the subject. His sentiments towards the occupants of certain chairs were calculated to arouse considerable apprehension in the breasts of the more timid among them.

No critic, however, has stated the case against our pundits more convincingly, more exhaustively, or with more devastating effect than Mr. Sidgwick in his *Process of Argument* (1893), and in his *Use of Words in Reasoning* (1901). In the latter work he appeals for a defence of the system whose absurdities he so ably exposes, and expresses a natural surprise that no defence should have been attempted. So far as I am aware, his criticisms remain unchallenged to this day. Professor Carveth Read had, indeed, already put forward, in his *Logic: Deductive and Inductive*, certain considerations intended to blunt the edge of what Mr. Robertson has described as “the immemorial gibes at logical forms and futilities.” But Mr. Read had the honesty to admit that formal logic can only help a man to reason better “if he has the sense to know when formalities are out of place.” Unfortunately, when we are dealing with live problems—and not merely competing with Mr. Jevons’s ingenious logic-machine in the deduction of clear-cut wooden conclusions from clear-cut wooden premises—“formalities” need to be kept very strictly in their place. The tendency of the logic of Academe is to invite us to forget this, and, by encouraging us to rely on those very formalities, to unfit us for dealing with live problems at all.

The root of the trouble lies in the professional logician’s blind faith in his formulæ, and in his hopelessly inadequate treatment of ambiguities of assertion and interpretation. He habitually allows the clear-cut simplicity of his little hoard of propositional forms to blind him to the real complexity of the relations which he attempts to make clearer by their means. It pleases him to assume that when he has reduced a general statement to such a logical form as, All M is P, or No S is M, he has eliminated all risk of error and put a similarly clear-cut conclusion within the student’s reach. In this he greatly errs, for, as Mr. Sidgwick reminds him, the weight of any generalization “depends on the weight of all the details, *pro* and *con*, and so far as any of these are left

out of sight risk of error enters into our judgment." The formal logician, therefore, in his enthusiasm for *formal* validity, deliberately drops out of sight the very factor on which the *real* validity of our judgments in the last resort depends—adequacy of reference to the facts. His method ceases to be of value as a guide to right conclusions precisely at the point where the risk of error is greatest.

That the study of logic has *some* value as a mental exercise may be freely conceded. But does it provide anything like that kind and amount of training in reflective thinking which our universities, as centres of the national culture, ought in honour to provide? It is scarcely necessary to enlarge on the necessity for such a training. Let me, however, quote what Mr. Norman Angell says on the subject at page 192 of his book, *The Public Mind* :—

Since we are so made that our minds fall continually into traps in judging even the plainest things, so that we come to wrong conclusions about self-evident facts, education should aim, first, at correcting this tendency, strengthening the sense of evidence, developing a scientific spirit in dealing with the everyday affairs of life—enlarging, in other words, the capacity to recognize truth when it stands before us.

So far as I am aware, no such training is given in any school or university in our country to-day. Teachers who recognize the value of such training are, as Mr. Angell points out, faced with a very real difficulty. "To the degree to which the pupil shows a tendency to want to know the why and wherefore, to speculate, he tends to forget his names and dates.....and to become an unreliable pupil, liable to be ploughed." Hence wherever eagerness for the adventure of thinking manifests itself it has to be repressed. And yet no mere getting-up of "subjects" can be a substitute for an adequate training in the art of right thinking. Hence, as Professor Hickson bluntly puts it in the *Rationalist Annual* for 1929, "as regards the cultivation of the capacity to weigh evidence and to distinguish fact from falsehood, most people remain children and savages all their lives."

The logic of the university class-room not only fails to provide such a training; by usurping its place without fulfilling its function it definitely bars it out. There remains the farther discipline provided for a limited number of students in the department of philosophy. This is of value insofar as it helps the student to a truly philosophic temper and outlook. As a rule, the student has to help himself in this matter through his private reading and meditations. A writer in a well-known Nonconformist paper has commended the professors of this subject for the "wise reserves" which

they exercise in expounding it ; on the ground that a number of aspirants for the ministry include the subject in their curriculum, and that such a policy smooths their path to the pulpit. In other words, he openly rejoices in the fact that the universities are still, in certain respects, "tied houses" of the clerical interest. The aim—and here, again, I echo Mr. Norman Angell—is "to bring and keep men under the discipline of religion," and not to equip them "to decide whether the religion under whose influence they are brought is a true one." Need any one wonder that the Roman Catholic Church is reaping a rich harvest?

Mr. Sidgwick scarcely goes far enough in his more constructive suggestions. What is wanted is not merely an improvement here and there in the manner of teaching the traditional logic. We want a *metallogic*—a "beyond logic"—in a sense not covered by any modern extension of the subject with which I am acquainted. Since the traditional logic has stultified itself by its self-imposed limitations, the distinguishing mark of the metalogician should be a disposition to break down all such artificial barriers. Keeping in view the much-to-be-desired end, he will press into his service every kind of technique, and fearlessly pursue every line of inquiry which will conduce to that end. In what university is this being done to-day?

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